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ABSTRACT

The Wayne County Pre-Reading Program for Preventing Reading Failure is an individually, diagnostically prescribed, perceptual-cognitive-linguistic development program. The program utilizes the largest compilation of prescriptively coded, reading readiness materials to be assigned prior to and concurrent with first-year reading instruction. The Wayne County Pre-Reading Test's eight subtests determined the assignment of appropriate materials, lessons, and games. The deHirsch Predictive Index, on which the Pre-Reading Test was patterned, was also given. The first graders in three experimental and three matched control schools were sampled and compared on reading achievement at the end of the first grade with standardized reading tests. Factor analysis was used to reduce the number of teacher and classroom variables. The hypothesis that the Wayne County Pre-Reading Program would increase reading achievement at the end of the first grade was confirmed. The Wayne County Pre-Reading Test with the Self-Concept and Motivation Inventory (SCAMIN) exceeded the predictability of the deHirsch Predictive Index. All of the subtests of the Pre-Reading Test were significant contributors to the regression equations except Categories. Word Recognition I and II, Word Matching, Word Reproduction, and Reversals were the highest and most consistent predictors along with Achievement from SCAMIN. Tables of data, sample tests, and references are included. (AL)

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FINAL REPORT
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Grant No. OEG-5-9-325059-0040(010)

A STUDY OF THE EFFECTS OF FIRST GRADE PRESCRIPTIVE TEACHING BASED ON WEAKNESSES DIAGNOSED BY KINDERGARTEN PRE-READING TESTS

Research Report by
Norman J. Milchus

Project Director
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U. S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Spring, 1971

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SUMMARY

of

A STUDY OF THE EFFECTS OF FIRST GRADE PRESCRIPTIVE TEACHING BASED ON WEAKNESSES DIAGNOSED BY KINDERGARTEN PRE-READING TESTS

Project No. 9-E-059
Grant No. OEG-5-9-325059-0040(010)

Wayne County Intermediate School District
1500 Kales Building
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Spring, 1971

The Wayne County Pre-Reading Program for Preventing Reading Failure is an individually, diagnostically prescribed, perceptual-cognitive-linguistic development program. The program utilizes the largest compilation of prescriptively coded, reading readiness materials to be assigned prior to and concurrent with first-year reading instruction. The Wayne County Pre-Reading Test's eight subtests determined the assignment of appropriate materials, lessons, and games. The deHirsch Predictive Index, from which the Pre-Reading Test was patterned, was also given. The first graders in three

experimental and three matched control schools were sampled (n=337) and compared on reading achievement at the end of the first grade with the *Gates-MacGinitie Vocabulary* and *Comprehension* subtests and the *Gray Oral Reading Test*.

Factor analysis was used to reduce the number of teacher and classroom variables. A multiple regression analysis controlling for socio-economic, pre-test, observational, teacher, and classroom variables and factor scores held the experimental treatment accounting for a significant proportion of the variance on all the criterion tests given to the middle socio-economic climate sample, the Vocabulary subtest given to the total sample, and the Comprehension subtest given to the male first graders. *The hypothesis that the Wayne County Pre-Reading Program would increase reading achievement at the end of first grade was confirmed*. Some inconsistent results were traced to an intervening organizational variable at the lower-middle class experimental school.

The Wayne County Pre-Reading Test with the *Self-Concept and Motivation Inventory* (SCAMIN) exceeded the predictability of the deHirsch Predictive Index. All of the subtests of the Pre-Reading Test were significant contributors to the regression equations except Categories. *Word Recognition I and II*, *Word Matching*, *Word Reproduction*, and *Reversals* were the highest and most consistent predictors along with *Achievement Investment* from SCAMIN.

Other large predictors were Teacher Autonomy, Teacher Attitude Toward Individualization (both factored from the Kerlinger Education Scale VII), and Teacher Expectations of the Ease of Teaching Reading to Her Class. Each of these had a positive interaction with the experimental treatment. Teacher Aides and Student Teachers and Class Size were significant.

A variety of socio-economic measures of parental education and occupational status appears necessary. Normal Gross Motor Coordination was significant for the boys. Girls had a consistent advantage on Oral Reading.

Multiple correlations were as high as .82 for the middle class group.

Recommendations include continuation of the program in first grade and expansion in pre-school and kindergarten. Increasing the expressive language materials in the program and the training of paraprofessionals to conduct the individualization were recommended.

A STUDY OF THE EFFECTS OF FIRST GRADE PRESCRIPTIVE TEACHING BASED ON WEAKNESSES DIAGNOSED BY KINDERGARTEN PRE-READING TESTS

The Problem

The readiness to read of the child entering formal reading instruction is generally acknowledged as the most crucial complex of variables in the entire process of learning to read.[1] Montessori, Frostig, Kephart, Getman, Sigel, and Delacato, among others, have presented theories on the developmental factors involved in learning readiness, and have designed materials and activities to increase the perceptual, motor, and cognitive growth necessary to learn. The types, claims (Krippner, 1966), and use (Durrell, et al, 1958) of most of these readiness methods and materials have caused criticism and controversy (Cohen, 1969). The entire visual development emphasis is being challenged by psycho-linguistic researchers (Kolers, 1969). Motivation and behavioral programming have been the emphases of other programs reporting successful reading achievement results (Engellman, 1967).

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[1] Gertrude Hildreth claims that "studies of disability cases proved that most reading failure originated within the first weeks or months of the beginner's life at school" in Teaching Reading: A Guide to Basic Principles and Modern Practices (New York: Holt, Rinehart and Winston, 1958), 159-60.

The components of reading readiness range between alterable and relatively unalterable factors. Among the more unalterable variables are the child's sex, position among siblings, state of health and nutrition, adequacy of vision prior to reading, and age at the start of reading - a difficult tradition to change. Parental education, employment, reading patterns, language patterns, and cohesiveness are crude indicators of the probable life style and social class advantages and disadvantages that accompany each child to the act of learning. Given the child at age six, the school can accommodate some of these variables but it can do little to change them. The concept of a stable, general intelligence (Bloom, et al, 1967), as it is usually tested and defined, becomes less malleable by the time the child enters first grade. Although tested general intelligence is a fair predictor of reading success, it gives nothing more than expectations for the teacher to hold for any child. The factor analytic work of Singer in describing the subcomponents of the speed and power of reading was able to account for 89.3 percent of the tested variance in reading power, but only a few of the components have any relation to the teaching act (Holmes and Singer, 1961). Calfee and Venezky (1969) criticized standardized reading tests for not differentiating among component abilities and for being of limited diagnostic value. Diagnostic tests which do not prescribe an alternate course of instruction are of little use. This is the general case, since individualized instruction is found in only a fraction of schools using diagnostic procedures.

The Wayne County Pre-Reading Program

The Wayne County Pre-Reading Program for Preventing Reading Failure is a cooperative experiment to:

(1) Identify and create perceptual and cognitive development materials to be used on a prescriptively assigned basis for beginning readers who lack some of the components of reading readiness.[1]

(2) Evaluate the diagnostic areas and tests used to prescribe the learning materials, and to identify the qualifying conditions under which the diagnostic areas are related or not related to reading achievement.

(3) Determine the comparative reading achievement of first grade students in schools using the experimental materials to the reading achievement of statistically equated students in matched control schools.

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[1] Rachel Brake (ed.), Wayne County Pre-Reading Program for Preventing Reading Failure, Preliminary Edition (Detroit, Michigan: Wayne County Intermediate School District, August, 1969), 1-670.

Teachers in the Wayne County Pre-Reading Program for Preventing Reading Failure were assisted in concentrating on diagnosed, specific, and alterable (Ames, 1969) components of reading readiness--Pencil Use, Visuo-Motor, Auditory Perception, Auditory Memory, Categories (Classifying), Sequencing (Reversals), Visual Discrimination, Visual Memory, Kinesthetic, Tactile, Figure-Ground, and Fine and Gross Motor Coordination (see Appendix for the correspondence among The Wayne County Pre-Reading Test and the component areas). An Expressive Language (linguistic) curriculum area was developed too late in the program to be considered part of the treatment. Lessons for students with any of the above diagnosed weaknesses were assigned prescriptively. The dynamics of self concept and achievement motivation were also considered by the teachers (Milchus, Farrah, and Reitz, 1968). The teachers had at their disposal the largest collection of commercial and project developed materials coded for specific reading readiness areas that had ever been assembled.

The Wayne County Pre-Reading Program for Preventing Reading Failure has several features which give it a high probability of being replicated:

(1) The program is an alternative to the separate class in perceptual development and the delayed reading approaches.

(2) The program goes far beyond the limited scope of commonly used perceptual programs such as that of Frostig, Peabody, and Kephart.

(3) The program employs a large number of prescriptively coded readiness activities which are oriented to school and play rather than clinic.

Before the program could be diffused, analysis was needed to determine if stimulating and altering areas of perceptual and cognitive development could produce differential gains in reading achievement. The diagnosed areas which were most important to reading had to be known so that the balance among lessons could be properly weighted. Supervisors should know which teacher characteristics successfully interact or interfere with the effectiveness - if any - of the treatment. Teachers must be alert to the probable exceptions and qualifications that student characteristics have on the effectiveness of the lessons with any given individual.

Thus the research portion of the Wayne County Pre-Reading Program for Preventing Reading Failure addressed itself to the following hypotheses:

1. Reading failure in first grade can be reduced when prospective failures are (a) identified in kindergarten with instruments which diagnose specific areas of developmental

weakness and (b) placed in a program where appropriate materials and teaching strategies are used to compensate for deficiencies and to strengthen areas of weakness.

Sub-hypothesis 1. :

It is possible for the testing to be done and the necessary program to be developed and used in a public school setting whether it be in a center-city urban area, in an average suburban area, or in an advantaged ex-urban neighborhood.

2. A group test, the Wayne County Pre-Reading Test,[1] which is based on the individual battery of deHirsch, Jansky and Langford, will predict reading failure at a level compatible with practical classroom grouping.

In-Service Training

In-service education for participants is an essential ingredient in the program. The in-service sessions consisted of the following topics:

Producing Materials
Identifying and Coding Commercial Materials
Self Concept Enhancement

---

[1] See Appendix.

Achievement Motivation Principles

Classification Training

Gross Motor Training

Bi-Weekly Reports and Evaluations of Materials

The last component is what is crucial to the realization of the program. Individualized prescriptive teaching is difficult. It requires the teacher to simultaneously conduct many different activities, to keep in mind and record the needs of each youngster, and to plan or seize the opportunity to match the child with his prescribed activity. Aside from the introduction of purposes and skill areas, the group support and social incentive from peers to continue in the program is the only essential part of the in-service program, now that most of the content of these sessions is in print.

Design of the Study

Six elementary public schools were paired for the experiment. The first grade students and teachers in three schools were selected to receive the experimental treatment. Each of the three experimental treatment schools was matched with a school within the district on the basis of socio-economic, racial, similar housing, and geographic proximity. A plan to compare two experimental variations was abandoned, but it should be noted that each of the six schools was equally acceptable to the experimenters and the school staffs were acceptable to the experimentation.

Up-to-date school records provided mothers' and fathers' occupations and educations, family intactness, pre-school attendance, and health data. Teacher questionnaires were used to validate and add to the records. Teachers rated the students on several specific traits. Principals and assistant principals rated the teachers on personality and instructional differences. Teachers also completed an instrument used to categorize their educational philosophy. Students were administered the Wayne County Pre-Reading Test in kindergarten. The Experimental Group was also given the deHirsch Index and the Self-Concept and Motivation Inventory. The tests are included in the appendix, and are discussed below. Parental questionnaires were collected for one sample group, but the validities of the parent-supplied information will be reported in another study.

Given this enormous amount of data, it became necessary to reduce it. Variables which had a suspicion of unreliability or which had too few cases were not processed. All of the remaining variables were factor-analyzed so as to combine those variables which were essentially measuring the same factor. Sixty teacher and classroom variables were reduced to sixteen principal component factors. For the most part, these factors are more reliable than the variables which comprise them, since they combine repeated measurement of a similar trait, perception, or condition.

Student background and test variables were used in their unfactored state. The decision not to use factors in the first report was due to the preliminary nature of this investigation. Sensitive variables may be lost in a larger factor before they have had an opportunity to have their unique importance revealed. In addition, the specificity of the treatment would be lost if the diagnostic categories were reduced from eight to three. The sixteen teacher and classroom factors were used in the final analysis. The composition of these factors represents a study within a study, and will be discussed in detail.

All of the variables were entered into a multiple regression analysis equation to determine those variables which made the greatest contribution to predicting the three criterion reading tests given at the end of first grade. The degree to which the experimental treatment and any other variable could add to the prediction of reading achievement determined their practical significance. A stepwise multiple regression program was used which only permitted variables which were significant at a .05 level F-ratio to enter the equation. Variables were not able to be deleted if they subsequently lost their significance with the addition of other variables to the equation. The amount of criterion variance which the variable explained at the point at which it was entered is reported.

Multiple Regression Analyses were performed for each of the three criterion for the total sample, each of three socio-economic climates, experimental and control groups, and for both sexes.

Testing

Patterned after the deHirsch Predictive Index, the Wayne County Pre-Reading Test has several relative advantages. First, it is group-administered. Although one might wonder why the cost and time of diagnostic evaluation needs apologies, the economics of the individual reading test usually restricts its use to clinical settings and limited numbers of students. Second, the composite Index Score of the deHitsch Predictive Index hides the subcomponents which will contribute to reading success or failure. The Wayne County Pre-Reading Test avoids composite scores and uses categories which are suitable for remediation. Third, the Pre-Reading Test was found to be reliable enough for the coarse initial division of the class into "prescribe"-"don't prescribe" divisions.

The perceptual, cognitive, and linguistic areas on the Pre-Reading Test, and their parallels from the Predictive Index, are listed below:

Pre-Reading Test	deHirsch Index
Visuo-Motor	Bender Visuo-Motor Gestalt
Auditory Perception	Wepman Auditory Perception
Auditory Memory	Words in Context
Categories	Categories
Word Matching	Word Matching
Reversals	Horst Reversals
Word Recognition I and II	Word Recognition I and II
Word Reproduction	Word Reproduction

A pencil use test was discarded from the analysis of both batteries because less than one percent of the students were identified as not passing this test. A test of Auditory Memory was substituted in the Wayne County Pre-Reading Test for the Words in Context test used by deHirsch. The Words in Context measure requires more time to score than any of the other tests. Many students exceeded two hundred words more than the students in the deHirsch population.

The correlations between parallel subtests were moderate, using tetrachoric correlations. While the parallel tests are not statistically equivalent, they attempted to map the domain by similar routes. All of the group test measures had low positive intercorrelations and are relatively independent of one another. Word Recognition I and Word Recognition II were the exceptions. They were combined because of their high correlation. Word Reproduction was related with Word Recognition in the .40s and .50s, thus one factor cluster was a lexical familiarity factor. In a factor analysis, the cognitive tests of Categories and Auditory Memory combined with Word Matching. The visual perception tests of Reversals and Visuo-Motor Perception were joined by Auditory Perception. The auditory response in the Auditory Perception test had nothing comparable to which to correlate. Evidently the visual response in the Auditory Perception test was active enough to cause its association with the visual tests.

The similarity with the deHirsch subtest titles cannot transfer the validities of the deHirsch subtest to the matching tests on the Wayne County Pre-Reading Test. Although Zaeske replicated the validity of the deHirsch Predictive Index, some of the reported studies and comments have been critical. Severson announced disappointment with the Wepman Auditory Perception and the Frostig Tests of Visual Perception - the latter of which was a second line of diagnosis and treatment in the project. Severson did not supply data, however. Uhl and Nurss found socio-economic level differences on the factor of Visual Discrimination of Words and Letters. On this factor the low socio-economic level students did not use the skills found in the Wepman Auditory Discrimination Test to assist in solving the visual discrimination problem, but the upper-middle socio-economic level students did - as they did on the Wayne County Pre-Reading Test.

In addition to the two perceptual-cognitive-linguistic batteries, the Self-Concept and Motivation Inventory (SCAMIN)--Pre-School/Kindergarten Form (Milchus, Farrah, and Reitz, 1967) was administered to the Experimental Group. The SCAMIN Motivation factors are Achievement Needs and Failure Avoidance (since renamed Achievement Investment). Self Concept is combined from Role Expectations and Self Adequacy scores. Self Concept has a reliability of .79 for the sample. Nagel found that scores on the similar Early Elementary Form of SCAMIN were predictive of success on computer-assisted instruction.

Student Variables

Socio-economic, health, and background variables were gathered for each student in the Experimental and Control Groups. After many variables were discarded due to low discrimination or being a subset of another variable, the final list included:

Clinical Testing of Students' Vision

Clinical Testing of Students' Hearing

Clinical Testing of Students' Speech

Teacher Rating of Students' Gross Motor Coordination

Teacher Rating of Students' Literary Knowledge (This variable was a powerful predictor, but was discarded due to poor reliability.)

Student Age in Months

Education in Years of the Fathers

Education in Years of the Mothers

Employment Status of the Fathers (Reiss Index)

Employment Status of the Mothers

Intactness of Families (Fathers absent)

Teachers' Rating of Classroom Participation

Extensive Student Travel

Attendance at Pre-School

Extensive Absence

English Language in the Home

The Reiss Index of Occupational Status was used to rate the occupational levels. Data which were not obtained from student records were gathered from a questionnaire to the teachers (See Appendix). The soliciting of parental reports was discouraged by the urban researchers.[1] Alienating a militant parents' group could have abruptly halted the experiment. Severson has indicated the negativism of parents to his carefully drawn questionnaire.

---

[1] Parental reports were found for one sample and are reported in the expanded dissertation study. Small contributions from type of student interests, parental goals, number of siblings (not sibling position), reported attention span, and the number of adults reading to the child aided prediction of later achievement.

Teacher and Classroom Variables

A factor analysis of the teacher backgrounds ratings of teachers, teachers' readiness emphases, teachers' perceptions of their classes, and the size and sex composition of the classes consolidated thirty variables. The thirty item scores on the Kerlinger Education Scale VII were factored separately into principal components. The Kerlinger Education Scale VII grouped into factors replicating those which Kerlinger had reported for the longer Education Scale VI (see Table 1).[1] Factor I, which Kerlinger termed Romantic Naturalism, was named Individualization of Instruction to reflect the first grade activities implied by the content of the philosophically probing items. The eight major factors rotated were the teachers' attitudes toward:

Individualization of Instruction
Subject-Matter Emphasis
Discipline Emphasis
Experimentalism
Academic Acquiescence Versus Academic Autonomy
Authoritarianism
Attitudinal Emphasis
Reconstructionism

---

[1] Fred N. Kerlinger's unpublished Education Scale VII is used with permission of the author.

TABLE 1

TEACHERS' EIGHT FACTOR ROTATED FACTOR ANALYSIS OF KERLINGER EDUCATION SCALE VII

Factor Loading	Item Number	Item and Classification: A: Progressivism; B: Traditionalism (Kerlinger's Factor Names in Parentheses if Different)
		Factor I: Individualization (Romantic Naturalism)
.93	15	We should fit the curriculum to the child and not the child to the curriculum. (A)
.86	21	True discipline springs from interest, motivation, and involvement in live problems. (A)
.84	22	Emotional development and social development are as important in the evaluation of pupil programs as academic achievement. (A)
.83	14	Learning experiences organized around life experiences rather than around subjects is desirable in our schools. (A)
.72	18	The healthy interaction of pupils one with another is just as important in school as the learning of subject matter. (A)
.65	10	The goals of education should be dictated by children's interests and needs, as well as by the demands of society. (A)
		Factor II: Subject Emphasis (Educational Conservativism)
.81	16	Subjects that sharpen the mind, like mathematics and foreigh languages, need greater emphasis in the public school curriculum. (B)
.81	20	The curriculum should contain an orderly arrangement of subjects that represents the best of our cultural heritage. (B)
.75	28	Schools should teach children dependence on higher moral values. (B)
.74	2	The curriculum consists of subject matter to be learned and skills to be acquired. (B)
.73	17	Since life is essentially a struggle, education should emphasize competition and the fair competitive spirit. (B)
.72	27	Children need and should have more supervision and discipline than they usually get. (B)
.70	19	The organization of instruction and learning must be centered on universal ideas and truths if education is to be more than passing fads and fancies. (B)

TABLE 1--Continued

Factor Loading	Item Number	Item and Classification
		Factor III: Discipline Emphasis (Criticism of the Schools)
.85	25	One of the big difficulties with modern schools is that discipline is often sacrificed to the interests of children. (B)
.79	1	Learning is essentially a process of increasing one's store of information about the various fields of knowledge. (B)
		Factor IV: Experimentalism
-.79	5	The true view of education is so arranging learning that the child gradually builds up a storehouse of knowledge that he can use in the future. (-B)
.59	4	It is more important that the child learn how to approach and solve problems than it is for him to master the subject matter of the curriculum. (A)
.54	12	Right from the very first grade, teachers must teach the child at his own level and not at the level of the grade he is in. (A)
.51	26	Teachers should encourage pupils to study and criticize our own and other economic systems and practices. (A)
.47	30	Learning is experimental; the child should be taught to test alternatives before accepting any of them. (A)
.43	24	Children should be taught that all problems should be subjected to critical and objective scrutiny, including religious, moral, economic, and social problems. (A)
		Factor V: Academic Acquiescence versus Academic Autonomy (Unnamed by Kerlinger)
.79	11	Each subject and activity should be aimed at developing a particular part of the child's makeup: physical, intellectual, social, moral, or spiritual (B)
.73	13	Teachers need to be guided in what they are to teach. No individual teacher can be permitted to do as he wishes, especially when it comes to teaching children. (B)
.48	17	Since life is essentially a struggle, education should emphasize competition and the fair competitive spirit. (B)

TABLE 1--Continued

Factor Loading	Item Number	Item and Classification
		Factor VI: Authoritarianism (Criticism of the Schools)
.76	8	Schools of today are neglecting the three R's. (B)
.62	6	What is needed in the modern classroom is a revival of the authority of the teacher. (B)
.61	7	Teachers should keep in mind that pupils have to be made to work. (B)
		Factor VII: Attitudinal Emphasis (Life Adjustment)
.84	3	The learning of proper attitudes is often more important than the learning of subject matter. (A)
.49	26	Teachers should encourage pupils to study and criticize our own and other economic systems and practices. (A)
-.47	9	Standards of work should not be the same for all pupils; they should vary with the pupil. (-A)
		Factor VIII: Reconstructionism
.81	29	The public school should take an active part in stimulating social change. (A)
.66	23	Education and educational institutions must be sources of new social ideas. (A)
.57	24	Children should be taught that all problems should be subjected to critical and objective scrutiny, including religious, moral, economic, and social problems. (A)
-.48	27	Children need and should have more supervision and discipline than they usually get. (-B)
-.48	10	The goals of education should be dictated by children's interests and needs, as well as by the demands of society. (-A)
.41	26	Teachers should encourage pupils to study and criticize our own and other economic systems and practices. (A)

All of the factors were consistent in clustering progressivism and traditionalism items into separate factors. A negative loading (-.48) on a Progressivism item in the progressive Reconstructionism factor was found:

> The goals of education should be dictated by children's interests and needs, as well as by the demands of society.

The Reconstruction factor has moderate disagreement with this item, suggesting that some of the factor's variance is comprised of power motives as well as humanistic motives--that is, "demands of society" are valued over "children's interests and needs."

Factor V was a traditionalism factor. The name Academic Acquiescence was derived from the item with the second highest loading--an item which Kerlinger elected not to title:

> Teachers need to be guided in what they are to teach. No individual teacher can be permitted to do as he wishes, especially when it comes to teaching children.

Because of its negative correlation with the criterion, the signs were reversed and the title was reversed to Academic Autonomy.

Other sources of teachers' influence on the children's achievement was gathered from (1) teacher background information; (2) instructional variations and classroom conditions; (3) teacher self-reports on their class; and (4) principals' forced rank scales on teacher traits.

Background teacher variables which were reported were age, marital status, years of teaching experience, teaching experience at grade level, teaching experience below first grade level (i. e., pre-school or kindergarten), graduate classes in reading, and educational level attained.

Classroom conditions and instructional variations were reported by the teachers. Class size, proportion of girls in the class, and the number of hours per week the teacher was aided by paraprofessionals and student teachers were recorded. The reading series published by Ginn & Co. was a constant for all of the schools in the study. The number of reading groups and weeks spent on pre-reading readiness gave an indication of the teacher's instructional adaptability and devotion to readiness activities. The experimental emphasis on visuomotor and classification training was universally heavy from the Experimental Group teachers. Teachers varied in the number of weeks spent on the pre-primer and pre-reading activities prior to the start of direct reading instruction, and differed on the average number of reading groups that they operated. The teachers were also asked their perception/expectation of the ease of controlling behavior and of teaching reading to their high, middle, low and entire class groups. With the regression partialing out many of the abilities of the students, the contribution of the Perception/Ease of Teaching Reading and Controlling Behavior became closer to a self-report of the teacher's ability to cope with her present class.

Principals' ratings on eight traits, such as the teachers' Instructional Adaptability to Individual Differences, Visible Energy, and Warmth over Aloofness were solicited. Ratings were forced ranked on a nine-point scale with reference labels to allow for comparison between school staffs. All scores were converted to standard T-scores so that the ratings of the principals and assistant principals could be averaged.

Factor analysis of thirty variables revealed eight principal components:

Perception/Expectation of Ease of Teaching Reading

Adaptability

Capacity for Grouping

Experience

Aides (hours per week; aides and student teachers)

Class Size (small)

Kindergarten/Pre-School Experience

Spontaneity versus Structure

Variable loadings are presented on Table 2. A Teacher Adaptability factor combined five principal's ratings and the teacher's Number of

TABLE 2

EIGHT FACTOR ROTATED FACTOR ANALYSIS ON TEACHER BACKGROUND AND CLASSROOM VARIABLES

Factor Loading	Variable Name and Factor Classification
	I. Perception/Expectation of Ease of Teaching Reading
.93	Ease of Teaching Reading - High Reading Group
.89	Ease of Teaching Reading - Middle Reading Group
.88	Ease of Teaching Reading - Low Reading Group
.71	Ease of Teaching Reading - Total Class
.51	Ease of Controlling Behavior - High Reading Group
.52	Ease of Controlling Behavior - Middle Reading Group
.46	Ease of Controlling Behavior - Total Class
	II. Adaptability
.81	Instructional Adaptability to Individual Differences
.79	Organizational Flexibility
.79	Visible Energy
.66	Graduate Hours in Reading
.64	Sense of Humor
.63	Control Without Harshness
	III. Capacity for Grouping
.80	Number of Reading Groups
.68	Ease of Controlling Behavior - High Reading Group
.62	Ease of Controlling Behavior - Total Class
.59	Ease of Controlling Behavior - Low Reading Group
-.50	Graduate Hours in Reading
.50	Ease of Controlling Behavior - Middle Reading Group
.42	Control Without Harshness
.41	Weeks of Pre-Primer and Pre-Reading Activity
	IV. Experience
.91	Experience
.84	Experience at Grade Level
.76	Age of Teacher
	V. Aides
.81	Aides (hours per week, aides and student teachers)
-.74	Achievement Emphasis
.67	Proportion of Girls in Class

TABLE 2--Continued

	VI. Class Size
-.85	Class Size
.60	Married
.42	Weeks of Pre-Reading and Pre-Primer Activities
	VII. Kindergarten/Preschool Experience
.74	Kindergarten/Preschool Experience
-.45	Sense of Humor
	VIII. Spontaneity versus Structure
-.89	Structure over Spontaneity
.62	Warmth versus Aloofness
.49	Weeks of Pre-Reading and Pre-Primer Activities
-.40	Achievement Emphasis

Graduate Hours in Reading. The Perception/Expectation of the Ease of Teaching Reading was consistently underlaid with the Ease of Controlling Behavior variables - confirmed by the principals' ratings of the teachers' Ability to Control without Harshness. Capacity for Grouping also picked up the Ease of Controlling Behavior variables. Apparently, the number of reading groups a teacher forms is related as much (or more) to the teacher's perception of his or her own capacity to handle classroom control as it is to the instructional needs of the students.

Spontaneity versus Structure factor describes a teacher with low structure, high spontaneity, high warmth, low aloofness, low achievement emphasis, and relatively more weeks spent on pre-reading activities. Teacher Experience was a logically consistent factor, including Age of Teacher. However, both Number of Hours of Aides and Student Teachers and Class Size bordered on the uninterpretable. Presence of Aides and Student Teachers was related with low Teacher Achievement Emphasis and a high Proportion of Girls in Class. The assignment of student teachers to teachers with well-behaved classrooms with a predominance of girls is a plausable explanation for the higher proportion of girls. Low achievement emphasis is a harder variable to justify in this factor. Achievement Emphasis was not considered a virtue for first grade teachers by most of the principals who rated them. Class Size had a high (-.85) loading on the Low Class Size factor. Unfortunately, the marital status of the teachers also loaded on this factor. Married teachers were more numerous in the suburban classrooms, which had small class sizes. Although it was not a random chance relationship, teacher marital status adds nothing to the theoretical construct of Class Size.

Findings

The Experimental Results

The hypothesis that the Experimental Group would exceed the Control Group in reading achievement was overwhelmingly supported by the Middle Socio-Economic Climate sample, where the Wayne County Pre-Reading Program accounted for 19, 29, and 24 percent of the variance on the three reading achievement measures. On the total sample, the experiment was statistically significant in adding to the prediction of the Vocabulary Subtest, but with only one percent of the variance. The male sample provided inconsistent experimental treatment results. The Wayne County Pre-Reading Program was positive in predicting Comprehension and negative on Vocabulary--three and four percent of the variance, respectively.

Much of this inconsistency was traced to the Lower-Middle Socio-Economic Climate experimental school whose teachers were under heavy stress due to a school reorganization which was threatening their job security. It was only with great reluctance and undue optimism that the school was allowed to remain in the experiment.

The predictors which were used to control the differences among groups provided the diagnostic validities of the Wayne County Pre-Reading Test and revealed the importance of the other variables in describing the antecedents and conditions of reading.

Wayne County Pre-Reading Test

The hypothesis that the Pre-Reading Test would be as predictive as the deHirsch Predictive Index was borne out. There were higher multiple correlations with the Gates-MacGinitie Comprehension and Vocabulary subtests and an insignificant difference with the Gray Oral Reading Test. The deHirsch Predictive Index accounted for 23 percent of the Vocabulary variance for its highest prediction. The deHirsch Predictive Index was used only with the Experimental Group. With the same group the Wayne County Pre-Reading Test and The Self-Concept and Motivation Inventory (SCAMIN) explained 15, 35, and 28 percent of the variance of Oral Reading, Vocabulary, and Comprehension test scores. About one-third of the accounted variance was predicted by SCAMIN. Failure Avoidance (renamed Achievement Investment) was the most consistent predictor of the SCAMIN subtest. Self-Concept and Achievement Needs were the remaining subtest. Both were significant on at least one criterion.

The scores from the Control Group had a slightly higher predictability even without SCAMIN--21, 36, and 31 percent of Oral Reading, Vocabulary, and Comprehension, respectively. Word Recognition I and II, Word Matching, and Word Reproduction were each the highest predictor of one reading score. Only Categories was not significant within the Control Group - or any other sample.

Reversals was the highest and most consistent predictor throughout all of the samples. The Middle Socio-Economic Climate Group did not gain any information from the Visuo-Motor or Word Matching subtests. However, this was the only socio-economic group to be influenced by Auditory Memory.

All of the subtests were reliable enough (.61 to .90) for group use.

Socio-Economic Variables

Variables alternated as the lead criterion predictors in the set of socio-economic variables. None of the variables explained more than five percent of the variance after the test scores were entered into the regression equations. In this set, Employment of Mother was the most frequently significant variable and was usually related to Oral Reading. Education of Father and Education of Mother led the socio-economic variable set at the low socio-economic and low-middle socio-economic climates, respectively. Occupational Status of Father was a more sensitive predictor than parental education in the middle class group.

A cross-sex relationship exists, with mothers influencing sons and fathers influencing their daughters. Education and Employment of Mother was related to achievement among boys, and Education of Father was related to achievement for the girls.

Socio-Economic Climate of School was of little predictive use after the individual socio-economic data were entered.

Intactness of Family occasionally added one or two percent to the explanation of reading score variance.

Teacher and Classroom Variables

Teacher attitudes (Kerlinger Education Scale VII), self-perceptions with regard to their classes, principals' ranked ratings of the teachers, readiness provisions, teacher biographical data, and classroom size were factor-analyzed to yield some powerful indicators of experimental success.

Within the Experimental Group, the factors of Teacher Autonomy (or Professional Self-Concept), Teacher Attitude Toward Individualization, Teacher Attitude Toward Experimentalism, Teacher Emphasis Toward Discipline (negative), Emphasis on Student Attitude (negative) accounted for over a third of the 57 percent of the attributable Vocabulary variance. Slightly opposite relationships were found on expressed attitudes toward individualization and autonomy in the Control Group. The Teacher Expectation and Perception of the Ease of Teaching Reading to Her Class was a large but inconsistent predictor. Again the Experimental Group reacted positively and the Control Group negatively. These differences suggest an interaction effect of attitude and experiment; that is, appropriate teacher attitudes are without positive instructional effect unless an implementing experimental program is available to put the attitudes into action.

Teacher Experience in Years was a negatively related factor with reading achievement, particularly among the low-socio-economic climate males. Teacher Authoritarianism, Teacher Spontaneity Over Structure, and Teacher Attitude Toward Reconstructionism were also negatively related to the criteria. Teacher Adaptability, Emphasis on Subject Matter, and Capacity for Grouping appeared as significant factors.

The use of Teacher Aides and Student Teachers (hours per week) equalled or slightly exceeded Smaller Class Size in its influence on reading scores. The paraprofessionals and student teachers explained variances as high as five percent.

Other Student Variables

The student physical variables which were identified as significant predictors of reading achievement were (in order of frequency of appearance): Normal Gross Motor Coordination (a teacher rating), Normal Vision, Excessive Absence (negative), and Normal Speech. Gross Motor Coordination was important to the boys and to the Control Group. The Experimental Group had some activities, such as those of

Kephart, to aid in minimizing the effect of gross motor developmental lags. Normal Hearing did not contribute to the prediction.

Experiential variables were Extensive Travel, Normal Participation in Classroom Discussion, and Pre-School Attendance. Preschool attendance appeared related to achievement only in the middle class private nursery schools. English Language Spoken in the Home did not add to the regression equations.

Sex and Age

Being a girl added on the average of five percent to the prediction of Oral Reading variance in all samples after all other variable sets were entered into the analysis. Vocabulary and Comprehension were not so consistently influenced.

In no sample did the Relative Age in Grade significantly aid in predicting achievement in reading.

As noted elsewhere, boys were more vulnerable to coordination problems and excessive absence, although girls have a higher frequency of excessive absence. Girls benefited from Extensive Travel and Normal Participation in Classroom Discussion.

Reading achievement of females was related to higher Teacher Expectations of the Ease of Teaching Reading to the Class, Smaller Class Size, and Teacher Adaptability, but not Teacher Spontaneity Over

Structure. Males did better with teachers of less experience (or age), teachers with kindergarten experience, and with the presence of teacher aides or student teachers.

The total reading test variance for which the Wayne County Pre-Reading Test scores accounted was identical for males and females; however, the contributions of the subtests revealed different cognitive and perceptual functioning among first grade boys and girls. Among the females, Reversals, Auditory Perception, and Auditory Memory were most important. Among the males, the lexical variables of Word Recognition I and II and Word Matching were the most efficient forecasters of reading achievement.

Multiple Correlations

The highest multiple correlation was .82 for the middle socio-economic climate group and .78 for the males, both with Vocabulary subtest scores. The Gray Oral Reading Test scores had the lowest multiple correlations. Males ran higher multiple correlations than females on the Oral Reading and Vocabulary scores.

Conclusions and Recommendations

Conclusions

Using stepwise multiple regression analysis to control the effect of a large number of variables, the Wayne County Pre-Reading Program was found significantly effective in producing much higher reading achievement scores among middle socio-economic climate first graders. The Experimental Group accounted for up to 29 percent of the Gates-MacGinitie Vocabulary subtest score, 24 percent of the Gates-MacGinitie Comprehension subtest score, and 19 percent of the Gray Oral Reading Test Score. The effects on the total experimental group were significant but small, and were inconsistent among the first grade males. The lower-middle socio-economic climate experimental school had intervening conditions which lowered achievement; thus, the vulnerability of the experimental program to teacher quality and stability is considerable. Twenty percent of the experimental group's Vocabulary criterion variance was due to teacher variables.

The Wayne County Pre-Reading Test, accompanied by the Self-Concept and Motivation Inventory, were as predictive or moreso than the deHirsch Predictive Index. This supports the substitution of the group-administered measures on the Pre-Reading Test.

No single predictor was outstanding. The most efficient predictors recommended for re-use are:

1. All of the subtests of the Wayne County Pre-Reading Test with the exception of Categories
2. The Achievement Investment subtest of the Self-Concept and Motivation Inventory
3. Physical variables such as Gross Motor Coordination for the boys and Normal Vision
4. Teacher attitude factors from the Kerlinger Education Scale VII: Attitude Toward Individualization and Autonomy
5. Sex: Female for predicting Oral Reading
6. A full set of parental educational and occupational data
7. Hours of Teaching Aides and Student Teachers
8. Class Size
9. Extensive student travel and kindergarten teacher's rating of child's knowledge of children's literature

Recommendations

In view of the promising effect of the Wayne County Pre-Reading Program in middle class schools, it is recommended:

1. That the materials be further evaluated and edited into a smaller number of lessons. [This has now been done.]

2. That full implementation of the program continue in: (a) first grade, concurrent with reading instruction; (b) kindergarten, using diagnostic, individually prescribed instruction; and (c) pre-school, using the materials.
3. That paraprofessionals be trained and employed to spare teachers the distributive task of assigning the materials on an individual basis. Hopefully, this should reduce the variability of teacher interest and skill upon the program.

Because of the lower experimental differences on the oral reading scores, an expansion of the expressive language materials in the Program is recommended.

The methodology of using factor analysis to consolidate a large number of variables, and using the factor scores in a multiple regression, should be made a routine procedure in achievement prediction involving a large number of variables.

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APPENDIX A

KERLINGER'S
EDUCATION SCALE VII

Instructions: Given below are 30 statements on educational ideas and problems about which we all have beliefs, opinions, and attitudes. We all think differently about such matters, and this scale is an attempt to let you express your beliefs and opinions. Respond to each of the items as follows:

Agree Very Strongly:	+ 3	Disagree Very Strongly:	- 3
Agree Strongly:	+ 2	Disagree Strongly:	- 2
Agree:	+ 1	Disagree:	- 1

For example, if you agree very strongly with a statement, you would write + 3 on the short line preceding the statement, but if you should happen to disagree with it, you would put a - 1 in front of it. Respond to each statement as best you can. Go rapidly but carefully. Do not spend too much time on any one statement; try to respond and then go on.

_____ 1. Learning is essentially a process of increasing one's store of information about the various fields of knowledge.

_____ 2. The curriculum consists of subject matter to be learned and skills to be acquired.

_____ 3. The learning of proper attitudes is often more important than the learning of subject matter.

_____ 4. It is more important that the child learn how to approach and solve problems than it is for him to master the subject matter of the curriculum.

_____ 5. The true view of education is so arranging learning that the child gradually builds up a storehouse of knowledge that he can use in the future.

_____ 6. What is needed in the modern classroom is a revival of the authority of the teacher.

_____ 7. Teachers should keep in mind that pupils have to be made to work.

_____ 8. Schools of today are neglecting the three R's.

_____ 9. Standards of work should not be the same for all pupils; they should vary with the pupil.

_____ 10. The goals of education should be dictated by children's interests and needs, as well as by the demands of society.

_____ 11. Each subject and activity should be aimed at developing a particular part of the child's makeup: physical, intellectual, social, moral, or spiritual.

______ 12. Right from the very first grade, teachers must teach the child at his own level and not at the level of the grade he is in.

______ 13. Teachers need to be guided in what they are to teach. No individual teacher can be permitted to do as he wishes, especially when it comes to teaching children.

______ 14. Learning experiences organized around life experiences rather than around subjects is desirable in our schools.

______ 15. We should fit the curriculum to the child and not the child to the curriculum.

______ 16. Subjects that sharpen the mind, like mathematics and foreign languages, need greater emphasis in the public school curriculum.

______ 17. Since life is essentially a struggle, education should emphasize competition and the fair competitive spirit.

______ 18. The healthy interaction of pupils one with another is just as important in school as the learning of subject matter.

______ 19. The organization of instruction and learning must be centered on universal ideas and truths if education is to be more than passing fads and fancies.

______ 20. The curriculum should contain an orderly arrangement of subjects that represents the best of our cultural heritage.

______ 21. True discipline springs from interest, motivation, and involvement in live problems.

______ 22. Emotional development and social development are as important in the evaluation of pupil programs as academic achievement.

______ 23. Education and educational institutions must be sources of new social ideas.

______ 24. Children should be taught that all problems should be subjected to critical and objective scrutiny, including religious, moral, economic, and social problems.

______ 25. One of the big difficulties with modern schools is that discipline is often sacrificed to the interests of children.

______ 26. Teachers should encourage pupils to study and criticize our own and other economic systems and practices.

______ 27. Children need and should have more supervision and discipline than they usually get.

______ 28. Schools should teach children dependence on higher moral values.

______ 29. The public school should take an active part in stimulating social change.

______ 30. Learning is experimental; the child should be taught to test alternatives before accepting any of them.

APPENDIX B

DESCRIPTION OF PRESENT CLASS

Class size during the greater part of the year _____

Proportion of boys _____ to girls _____

Number of weeks spent on pre-reading and pre-primer activities _____

Number of reading groups usually in operation _____

Have you had a paraprofessional teacher aide, or volunteer mother assist you in instructional activity? _____ Yes _____ No
If Yes, how many hours per week?_____ hrs/week

Publisher of your basal text ______________________________

How would you rate this year's class in: *

Ease of Teaching Reading [check]

	Hardest	Harder		Representative			Easier		Easiest
Whole Class									
Top Group									
Middle Group									
Low Group									

Ease of Managing their Attention and Behavior [check]

	Hardest	Harder		Representative			Easier		Easiest
Whole Class									
Top Group									
Middle Group									
Low Group									

* Hardest:	Hardest class I have taught
Harder:	Harder than most classes I have taught
Representative:	Representative of most classes I have taught
Easier:	Easier than most classes I have taught
Easiest:	Easiest class I have taught

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APPENDIX C

LIST OF STUDENTS WITH EXCEPTIONAL CHARACTERISTICS

ARE THERE ANY STUDENTS IN THIS SAMPLE WHO . . . . . .
[Please list]

1. . . . To the best of your knowledge do not have a television set?

2. . . . Share their extensive travel [in this country or abroad] in class discussions and "show and tell"?

3. . . . To the best of your knowledge, attended a Headstart nursery school program?

4. . . . Have provided negligible volunteer participation in class discussion, "question and answer", and oral reading activities?

5. . . . Have a retarded sibling in the home?

6. . . . Were able to sound and read phrases prior to commencing reading instruction in first grade?

7. . . . Had an obvious almost total unawareness of the common nursery rhymes and children's literature familiar to most first graders entering the grade?

8. . . . Had an exceptionally outstanding knowledge of children's literature [upon entering first grade] as exhibited by story telling and singing?

9. . . . Have a foreign language spoken in the home?

10. . . . Have an obvious speech impediment?

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11. . . . Have a dialect which makes it difficult for them to be understood?

12. . . . Have a diagnosed hearing difficulty?

13. . . . Should be wearing glasses but are not?

14. . . . To your knowledge, appear to be coming to school without breakfast or lunch?

15. . . . Are falling asleep in class?

16. . . . Have accumulated absences of four weeks or more?

17. . . . Appear to be visibly ill?

18. . . . To your knowledge, have a household member who is chronically ill?

19. . . . Have not mastered bladder control?

20. . . . Are obviously uncoordinated i.e., trip over themselves, walk into walls?

21. . . . Are exceptionally prone to cry more than the usual first grader?

22. . . . Are special education referrals?

23. . . . Were kindergarten repeaters?

NJM:mlr

APPENDIX D

DESCRIPTION OF PARTICIPANTS IN THE EXPERIMENT

First grade teachers [names]:

A. ______________________
B. ______________________
C. ______________________
D. ______________________

E. ______________________
F. ______________________
G. ______________________

Place the letter preceeding each name in description scales below [one letter per box, please]. Describe the teacher's characteristics as being "most," "more," "less," or "least" representative of most teachers you have worked with or observed.

Description Scales [enter letter]

	Most	More		Representative			Less		Least
* Sense of Humor									
Visible Energy									
Organizational Structure									
Organizational Flexibility									

* Definitions:

Sense of Humor: The ability to provide and appreciate humor with children; to take oneself lightly.

Visible Energy: Displays personal activity and an intensity of pace and purpose.

Organizational Structure: Displays a preference for consistency and routine to spontaneity.

Organizational Flexibility: Unperturbed by interruptions, added students, and organizational changes that would cause others to break stride.

	Most	More		Representative			Less		Least
* Achievement Emphasis									
Instructional Adaptability									
Control without Harshness									
Aloofness over Intimacy									

* Definitions:

Achievement Emphasis: Strong committment to insisting on high standards of achievement.

Adaptability: Ability to adjust instruction to the wide variations of individual differences.

Control without Harshness: Ability to manage pupil behavior while maintaining warmth and friendliness.

Aloofness over Intimacy: Tendency to have slightly more social distance between herself and students; more of a cordial visitor than a big sister.

NJM:mlr

APPENDIX E

(*indicates Beta Weight Sign opposite that of simple correlation.)

TABLE 3

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF ORAL READING AMONG LOW SOCIO-ECONOMIC CLIMATE FIRST GRADERS (n=142)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
WORD MATCHING, PRE-READING TEST	0.31101	0.09673	0.09673	0.31101
WORD RECOGNITION, PRE-READING TEST	0.35367	0.12508	0.02835	0.27897
EMPLOYMENT OF MOTHER	0.40713	0.16576	0.04067	0.23801
TEACHER AUTONOMY, KERLINGER VII	0.45232	0.20460	0.03884	0.17595
YEARS OF TEACHING EXPERIENCE	0.49890	0.24890	0.04430	-0.15413
FEMALE IS 2, MALE IS 1	0.57627	0.33208	0.08318	0.29216

TABLE 4

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING VOCABULARY AMONG LOW SOCIO-ECONOMIC CLIMATE FIRST GRADERS (n=142)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
AUDITORY PERCEPTION, PRE-READING TEST	0.43751	0.19142	0.19142	0.43751
WORD REPRODUCTION, PRE-READING TEST	0.51581	0.26606	0.07464	0.37739
VISUO-MOTOR, PRE-READING TEST	0.54774	0.30002	0.03396	0.34242
EDUCATION OF FATHER IN YEARS	0.58157	0.33823	0.03821	0.16450
NORMAL VISION	0.60676	0.36816	0.02993	0.19793
TEACHER EXPECTATION OF TEACHING READING	0.63218	0.39966	0.03150	-0.32362
TEACHER AUTONOMY, KERLINGER VII	0.65453	0.42840	0.02875	0.14367
SMALLER NUMBER OF STUDENTS IN CLASS	0.67192	0.45147	0.02307	-0.02931

TABLE 5

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING COMPREHENSION AMONG LOW SOCIO-ECONOMIC CLIMATE FIRST GRADERS (n=142)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
WORD RECOGNITION, PRE-READING TEST	0.40660	0.16532	0.16532	0.40660
AUDITORY PERCEPTION, PRE-READING TEST	0.48213	0.23245	0.06712	0.37523
REVERSALS, PRE-READING TEST	0.51283	0.26299	0.03055	0.37948
TEACHER AUTONOMY, KERLINGER VII	0.56605	0.32042	0.05742	0.18772
EDUCATION OF FATHER IN YEARS	0.58227	0.33904	0.01862	0.14606
TEACHER INDIVIDUALIZATION, KERLINGER VII	0.61356	0.37645	0.03741	0.00804
VISUO-MOTOR, PRE-READING TEST	0.62873	0.39530	0.01885	0.29846

TABLE 6

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF ORAL READING AMONG LOW-MIDDLE SOCIO-ECONOMIC CLIMATE FIRST GRADERS

(n=96)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
EXPERIMENTAL TREATMENT	0.57028	0.32522	0.32522	-0.57028
REVERSALS, PRE-READING TEST	0.60847	0.37024	0.04502	0.07573
EDUCATION OF MOTHER IN YEARS	0.63394	0.40188	0.03165	0.13167
WORD MATCHING, PRE-READING TEST	0.65833	0.43340	0.03152	0.31817
NORMAL GROSS MOTOR COORDINATION, RATING	0.68853	0.47407	0.04067	0.34727
FEMALE IS 2, MALE IS 1	0.70872	0.50228	0.02821	0.25529

TABLE 7

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING VOCABULARY AMONG LOW-MIDDLE SOCIO-ECONOMIC CLIMATE FIRST GRADERS

(n=96)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
EXPERIMENTAL TREATMENT	0.40220	0.16176	0.16176	-0.40220
REVERSALS, PRE-READING TEST	0.52824	0.27904	0.11728	0.24110
AUDITORY MEMORY, PRE-READING TEST	0.58559	0.34292	0.06388	0.40548
VISUO-MOTOR, PRE-READING TEST	0.63417	0.40217	0.05925	0.29308
WORD RECOGNITION, PRE-READING TEST	0.65491	0.42891	0.02673	0.27381
NORMAL GROSS MOTOR COORDINATION, RATING	0.67682	0.45809	0.02918	0.30203
STUDENT'S EXTENSIVE TRAVEL, RATING	0.69406	0.48171	0.02362	0.17260

TABLE 8

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING COMPREHENSION AMONG LOW-MIDDLE SOCIO-ECONOMIC CLIMATE FIRST GRADERS (n=96)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
EXPERIMENTAL TREATMENT	0.39128	0.15310	0.15310	-0.39128
WORD MATCHING, PRE-READING TEST	0.47915	0.22958	0.07648	0.35921
WORD REPRODUCTION, PRE-READING TEST	0.52939	0.28026	0.05068	0.25555
EDUCATION OF MOTHER IN YEARS	0.56290	0.31686	0.03660	0.14962
REVERSALS, PRE-READING TEST	0.58752	0.34518	0.02832	0.10523
NORMAL SPEECH	0.60964	0.37167	0.02649	0.26836
TEACHER CAPACITY FOR GROUPING	0.63856	0.40776	0.03609	0.17284
STUDENT'S EXTENSIVE TRAVEL, RATING	0.66217	0.43847	0.03072	0.27143

TABLE 9

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF ORAL READING AMONG MIDDLE SOCIO-ECONOMIC CLIMATE FIRST GRADERS (n=99)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
EXPERIMENTAL TREATMENT	0.44123	0.19468	0.19468	0.44123
REVERSALS, PRE-READING TEST	0.53335	0.28446	0.08978	0.44419
AUDITORY MEMORY, PRE-READING TEST	0.56467	0.31886	0.03440	0.30544
FEMALE IS 2, MALE IS 1	0.61064	0.37288	0.05403	0.20638

TABLE 10

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING VOCABULARY AMONG MIDDLE SOCIO-ECONOMIC CLIMATE FIRST GRADERS (n=99)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
EXPERIMENTAL TREATMENT	0.54005	0.29166	0.29166	0.54005
REVERSALS, PRE-READING TEST	0.65598	0.43031	0.13865	0.54889
AUDITORY MEMORY, PRE-READING TEST	0.68423	0.46817	0.03786	0.34359
OCCUPATION OF FATHER, REISS INDEX	0.70826	0.50163	0.03347	0.28784
TEACHER EXPECTATION OF TEACHING READING	0.76389	0.58353	0.08190	-0.27073
TEACHER RECONSTRUCTIONISM, KERLINGER VII	0.78036	0.60895	0.02542	*-0.28849
NORMAL CLASSROOM PARTICIPATION, RATING	0.79000	0.62411	0.01515	0.17283
WORD REPRODUCTION, PRE-READING TEST	0.79970	0.63952	0.01541	0.30191
TEACHER SUBJECT MATTER EMPHASIS, KER.VII	0.80944	0.65519	0.01568	*-0.01167
STUDENT EXPERIENCE IN PRESCHOOL	0.81795	0.66904	0.01385	0.21109

TABLE 11

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING COMPREHENSION AMONG MIDDLE SOCIO-ECONOMIC CLIMATE FIRST GRADERS

(n=99)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
EXPERIMENTAL TREATMENT	0.49055	0.24064	0.24064	0.49055
REVERSALS, PRE-READING TEST	0.61691	0.38058	0.13993	0.53177
WORD RECOGNITION, PRE-READING TEST	0.66060	0.43639	0.05581	0.40396
AUDITORY MEMORY, PRE-READING TEST	0.67891	0.46092	0.02454	0.32014
TEACHER EXPERIMENTALISM, KERLINGER VII	0.69710	0.48595	0.02503	0.44081
OCCUPATION OF FATHER, REISS INDEX	0.72016	0.51863	0.03267	0.24775

TABLE 12

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF ORAL READING FOR TOTAL FIRST GRADE SAMPLE (n=327)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
WORD MATCHING, PRE-READING TEST	0.28474	0.08108	0.08108	0.28474
WORD RECOGNITION, PRE-READING TEST	0.34053	0.11596	0.03488	0.25332
REVERSALS, PRE-READING TEST	0.36683	0.13457	0.01861	0.25912
AUDITORY MEMORY, PRE-READING TEST	0.38205	0.14596	0.01140	0.24338
EMPLOYMENT OF MOTHER	0.40497	0.16400	0.01804	0.19510
TEACHER AUTONOMY, KERLINGER VII	0.44923	0.20181	0.03781	0.17994
TEACHER SPONTANIETY, RATING	0.47841	0.22887	0.02707	-0.11232
TEACHING EXPERIENCE IN KINDERGARTEN	0.49568	0.24570	0.01683	0.07977
TEACHER INDIVIDUALIZATION, KERLINGER VII	0.51006	0.26016	0.01447	0.01104
TEACHER EXPECTATION OF TEACHING READING	0.52351	0.27406	0.01390	0.12027
TEACHER AUTHORITARIANISM, KERLINGER VII	0.53465	0.28585	0.01179	-0.05186
TEACHER EMPHASIS ON ATTITUDE, KERLINGER	0.54333	0.29521	0.00936	-0.06505
NORMAL GROSS MOTOR COORDINATION, RATING	0.55418	0.30711	0.01190	0.18240
FEMALE IS 2, MALE IS 1	0.59974	0.35969	0.05258	0.24662

TABLE 13

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING VOCABULARY FOR TOTAL FIRST GRADE SAMPLE (n=337)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
REVERSALS, PRE-READING TEST	0.41134	0.16920	0.16920	0.41134
WORD RECOGNITION, PRE-READING TEST	0.46917	0.22012	0.05092	0.32642
VISUO-MOTOR, PRE-READING TEST	0.50728	0.25733	0.03721	0.33688
AUDITORY PERCEPTION, PRE-READING TEST	0.53428	0.28545	0.02812	0.34249
AUDITORY MEMORY, PRE-READING TEST	0.55070	0.30327	0.01782	0.31035
WORD MATCHING, PRE-READING TEST	0.55926	0.31277	0.00950	0.35285
EDUCATION OF MOTHER IN YEARS	0.56922	0.32401	0.01124	0.21212
TEACHER AUTONOMY, KERLINGER VII	0.59454	0.35347	0.02946	0.14624
TEACHER SPONTANIETY, RATING	0.60992	0.37200	0.01852	-0.06424
EXPERIMENTAL TREATMENT	0.61611	0.37960	0.00760	0.10690
TEACHER INDIVIDUALIZATION, KERLINGER VII	0.63103	0.39820	0.01861	0.07756
TEACHER AIDES AND STUDENT TEACHERS, HRS.	0.64746	0.41920	0.02100	0.14678
NORMAL VISION	0.65295	0.42635	0.00715	0.13798
TEACHING EXPERIENCE IN KINDERGARTEN	0.66520	0.44249	0.01614	0.05722
NORMAL CLASSROOM PARTICIPATION, RATING	0.67379	0.45399	0.01151	0.09449
TEACHER DISCIPLINE EMPHASIS, KERLINGER	0.67861	0.46051	0.00652	-0.14809
TEACHER EXPERIMENTALISM, KERLINGER VII	0.68332	0.46692	0.00641	0.07074
EMPLOYMENT OF MOTHER	0.68806	0.47343	0.00650	0.19117
EXCESSIVE ABSENCE IN FIRST GRADE	0.69299	0.48023	0.00681	-0.10248
FEMALE IS 2, MALE IS 1	0.69874	0.48824	0.00801	0.12580

TABLE 14

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING COMPREHENSION FOR TOTAL FIRST GRADE SAMPLE (n=337)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
REVERSALS, PRE-READING TEST	0.36173	0.13085	0.13085	0.36173
WORD RECOGNITION, PRE-READING TEST	0.45101	0.20341	0.07256	0.35547
VISUO-MOTOR, PRE-READING TEST	0.48650	0.23669	0.03328	0.31552
AUDITORY PERCEPTION, PRE-READING TEST	0.50553	0.25556	0.01888	0.30299
WORD MATCHING, PRE-READING TEST	0.52073	0.27116	0.01560	0.33199
OCCUPATION OF FATHER, REISS INDEX	0.54015	0.29176	0.02060	0.22139
WORD REPRODUCTION, PRE-READING TEST	0.54874	0.30112	0.00936	0.30548
TEACHER AUTONOMY, KERLINGER VII	0.57816	0.33427	0.03315	0.17933
INTACT FAMILY	0.58507	0.34230	0.00803	0.07753
TEACHER INDIVIDUALIZATION, KERLINGER VII	0.60860	0.37039	0.02809	0.13184
TEACHING EXPERIENCE IN KINDERGARTEN	0.61728	0.38103	0.01064	-0.01879
TEACHER AIDES AND STUDENT TEACHERS, HRS.	0.62747	0.39372	0.01269	0.08071
EMPLOYMENT OF MOTHER	0.63344	0.40124	0.00752	0.19852
SMALLER NUMBER OF STUDENTS IN CLASS	0.64007	0.40970	0.00845	0.25086
STUDENT'S EXTENSIVE TRAVEL, RATING	0.64614	0.41750	0.00780	0.21825
FEMALE IS 2, MALE IS 1	0.66078	0.43663	0.01913	0.15337

TABLE 15

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF ORAL READING AMONG CONTROL GROUP

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
WORD REPRODUCTION, PRE-READING TEST	0.31580	0.09973	0.09973	0.31580
WORD MATCHING, PRE-READING TEST	0.40986	0.16798	0.06825	0.30636
AUDITORY MEMORY, PRE-READING TEST	0.43500	0.18922	0.02124	0.29831
EMPLOYMENT OF MOTHER	0.46710	0.21819	0.02896	0.18217
TEACHER AIDES AND STUDENT TEACHERS, HRS.	0.52006	0.27047	0.05228	0.29075
SOCIO-ECONOMIC CLIMATE OF SCHOOL	0.54984	0.30232	0.03185	-0.14616
TEACHER AUTHORITARIANISM, KERLINGER VII	0.57199	0.32717	0.02485	-0.01202
NORMAL GROSS MOTOR COORDINATION, RATING	0.58944	0.34744	0.02026	0.20673
EXCESSIVE ABSENCE IN FIRST GRADE	0.60354	0.36426	0.01683	-0.08710
TEACHER EXPERIMENTALISM, KERLINGER VII	0.61695	0.38063	0.01637	0.04127
FEMALE IS 2, MALE IS 1	0.65308	0.42652	0.04589	0.34009
WORD RECOGNITION, PRE-READING TEST	0.66639	0.44407	0.01756	0.28241

TABLE 16

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING VOCABULARY AMONG CONTROL GROUP

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
WORD MATCHING, PRE-READING TEST	0.38958	0.15178	0.15178	0.38958
WORD RECOGNITION, PRE-READING TEST	0.49961	0.24961	0.09783	0.36118
AUDITORY MEMORY, PRE-READING TEST	0.54395	0.29588	0.04627	0.37108
AUDITORY PERCEPTION, PRE-READING TEST	0.57133	0.32642	0.03054	0.32681
EDUCATION OF MOTHER IN YEARS	0.59368	0.35245	0.02603	0.21489
TEACHER AIDES AND STUDENT TEACHERS, HRS.	0.62991	0.39679	0.04434	0.33874
REVERSALS, PRE-READING TEST	0.64611	0.41746	0.02067	0.33056
WORD REPRODUCTION, PRE-READING TEST	0.65751	0.43232	0.01486	0.33450
SOCIO-ECONOMIC CLIMATE OF SCHOOL	0.67685	0.45812	0.02580	-0.05998
TEACHER EXPECTATION OF TEACHING READING	0.71961	0.51784	0.05972	-0.25929
TEACHER CAPACITY FOR GROUPING	0.72900	0.53144	0.01360	*-0.01951
EXCESSIVE ABSENCE IN FIRST GRADE	0.75037	0.56305	0.03161	-0.12518
NORMAL GROSS MOTOR COORDINATION, RATING	0.76781	0.58954	0.02649	0.22679

TABLE 17

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING COMPREHENSION AMONG CONTROL GROUP

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
WORD RECOGNITION, PRE-READING TEST	0.35398	0.12530	0.12530	0.35398
AUDITORY MEMORY, PRE-READING TEST	0.45504	0.20706	0.08176	0.33605
VISUO-MOTOR, PRE-READING TEST	0.50479	0.25481	0.04775	0.32310
AUDITORY PERCEPTION, PRE-READING TEST	0.53294	0.28403	0.02922	0.31918
REVERSALS, PRE-READING TEST	0.55095	0.30354	0.01951	0.32665
OCCUPATION OF FATHER, REISS INDEX	0.56776	0.32235	0.01881	0.16911
TEACHER EMPHASIS ON ATTITUDE, KERLINGER	0.59606	0.35529	0.03294	-0.29051
TEACHER INDIVIDUALIZATION, KERLINGER VII	0.61648	0.38005	0.02476	-0.10927
TEACHER SUBJECT MATTER EMPHASIS, KER.VII	0.63416	0.40216	0.02211	0.00160
TEACHER AUTONOMY, KERLINGER VII	0.65059	0.42327	0.02111	*0.06377
EDUCATION OF MOTHER IN YEARS	0.66451	0.44158	0.01831	0.20139
FEMALE IS 2, MALE IS 1	0.67765	0.45920	0.01762	0.24667
STUDENT'S EXTENSIVE TRAVEL, RATING	0.68917	0.47495	0.01575	0.26403

TABLE 18

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF ORAL READING AMONG EXPERIMENTAL GROUP

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
FAILURE AVOIDANCE, SCAMIN	0.22245	0.04948	0.04948	0.22245
REVERSALS, PRE-READING TEST	0.36406	0.13254	0.08306	0.30591
WORD MATCHING, PRE-READING TEST	0.39041	0.15242	0.01988	0.26777
TEACHER EXPECTATION OF TEACHING READING	0.49005	0.24015	0.08772	0.32706
SMALLER NUMBER OF STUDENTS IN CLASS	0.51643	0.26670	0.02655	0.34826
YEARS OF TEACHING EXPERIENCE	0.53750	0.28890	0.02221	-0.07438
SOCIO-ECONOMIC CLIMATE OF SCHOOL	0.55712	0.31038	0.02147	0.16715
TEACHER AIDES AND STUDENT TEACHERS, HRS.	0.57581	0.33156	0.02118	-0.27439
FEMALE IS 2, MALE IS 1	0.61470	0.37786	0.04630	0.16899

TABLE 19

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING VOCABULARY AMONG EXPERIMENTAL GROUP

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
FAILURE AVOIDANCE, SCAMIN	0.28730	0.08254	0.08254	0.28730
SELF CONCEPT, SCAMIN	0.32749	0.10725	0.02471	0.15257
REVERSALS, PRE-READING TEST	0.53533	0.28657	0.17932	0.46468
VISUO-MOTOR, PRE-READING TEST	0.57271	0.32800	0.04142	0.37280
AUDITORY PERCEPTION, PRE-READING TEST	0.58968	0.34772	0.01973	0.33943
TEACHER INDIVIDUALIZATION, KERLINGER VII	0.65043	0.42306	0.07534	0.22709
WORD RECOGNITION, PRE-READING TEST	0.66422	0.44119	0.01812	0.30526
TEACHER DISCIPLINE EMPHASIS, KERLINGER	0.70218	0.49306	0.05187	-0.27837
TEACHER EXPERIMENTALISM, KERLINGER VII	0.71860	0.51638	0.02333	0.18701
TEACHER AUTONOMY, KERLINGER VII	0.73678	0.54284	0.02645	0.20252
TEACHER EMPHASIS ON ATTITUDE, KERLINGER	0.75181	0.56521	0.02237	* 0.10704

TABLE 20

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING COMPREHENSION AMONG EXPERIMENTAL GROUP

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
FAILURE AVOIDANCE, SCAMIN	0.24422	0.05964	0.05964	0.24422
ACHIEVEMENT NEEDS, SCAMIN	0.28737	0.08258	0.02294	0.16282
WORD RECOGNITION, PRE-READING TEST	0.44723	0.20001	0.11743	0.36363
REVERSALS, PRE-READING TEST	0.50456	0.25458	0.05457	0.37524
WORD MATCHING, PRE-READING TEST	0.52967	0.28055	0.02597	0.37400
OCCUPATION OF FATHER, REISS INDEX	0.56025	0.31389	0.03333	0.26512
SOCIO-ECONOMIC CLIMATE OF SCHOOL	0.59642	0.35572	0.04183	*0.38359
TEACHER AUTONOMY, KERLINGER VII	0.67137	0.45074	0.09502	0.32001
NORMAL VISION	0.68207	0.46522	0.01448	0.18516
TEACHER INDIVIDUALIZATION, KERLINGER VII	0.70693	0.49975	0.03454	0.26079
SMALLER NUMBER OF STUDENTS IN CLASS	0.72037	0.51893	0.01918	0.43953
INTACT FAMILY	0.73125	0.53473	0.01580	0.17741

TABLE 21

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF ORAL READING AMONG FIRST GRADE MALES (n=149)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
WORD MATCHING, PRE-READING TEST	0.33322	0.11104	0.11104	0.33322
WORD REPRODUCTION, PRE-READING TEST	0.39221	0.15383	0.04279	0.29490
EMPLOYMENT OF MOTHER	0.45591	0.20786	0.05403	0.28686
TEACHER AUTONOMY, KERLINGER VII	0.53889	0.29041	0.08255	0.29992
TEACHING EXPERIENCE IN KINDERGARTEN	0.55987	0.31346	0.02305	0.08470
WORD RECOGNITION, PRE-READING TEST	0.57872	0.33492	0.02147	0.29956
YEARS OF TEACHING EXPERIENCE	0.60568	0.36685	0.03192	-0.10950
TEACHER SUBJECT MATTER EMPHASIS, KER.VII	0.62360	0.38888	0.02203	0.15831
EXCESSIVE ABSENCE IN FIRST GRADE	0.63633	0.40492	0.01605	-0.06973
TEACHER EMPHASIS ON ATTITUDE, KERLINGER	0.64883	0.42098	0.01606	-0.12873
NORMAL GROSS MOTOR COORDINATION, RATING	0.66393	0.44080	0.01982	0.21157

TABLE 22

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING VOCABULARY AMONG FIRST GRADE MALES (n=149)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
EXPERIMENTAL TREATMENT	0.21153	0.04475	0.04475	*0.21153
WORD RECOGNITION, PRE-READING TEST	0.46539	0.21659	0.17184	0.38943
WORD MATCHING, PRE-READING TEST	0.55196	0.30465	0.08806	0.37006
AUDITORY PERCEPTION, PRE-READING TEST	0.58714	0.34473	0.04008	0.38547
VISUO-MOTOR, PRE-READING TEST	0.60871	0.37053	0.02579	0.34963
EDUCATION OF MOTHER IN YEARS	0.63522	0.40350	0.03298	0.28096
TEACHER AUTONOMY, KERLINGER VII	0.66421	0.44118	0.03768	0.26947
EMPLOYMENT OF MOTHER	0.67934	0.46150	0.02032	0.30279
TEACHING EXPERIENCE IN KINDERGARTEN	0.69122	0.47778	0.01628	0.08148
TEACHER INDIVIDUALIZATION, KERLINGER VII	0.71286	0.50817	0.03038	0.05816
TEACHER AIDES AND STUDENT TEACHERS, HRS.	0.73174	0.53545	0.02728	0.17781
TEACHER DISCIPLINE EMPHASIS, KERLINGER	0.74406	0.55363	0.01818	-0.14286
TEACHER EXPERIMENTALISM, KERLINGER VII	0.75301	0.56702	0.01340	0.04604
EXCESSIVE ABSENCE IN FIRST GRADE	0.75280	0.58186	0.01484	-0.10401
NORMAL GROSS MOTOR COORDINATION, RATING	0.77075	0.59406	0.01220	0.19221
TEACHER EXPECTATION OF TEACHING READING	0.77807	0.60540	0.01134	-0.05267

TABLE 23

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING COMPREHENSION AMONG FIRST GRADE MALES (n=149)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
EXPERIMENTAL TREATMENT	0.18253	0.03332	0.03332	0.18253
WORD RECOGNITION, PRE-READING TEST	0.45505	0.20707	0.17375	0.39482
WORD MATCHING, PRE-READING TEST	0.53845	0.28993	0.08286	0.36674
AUDITORY PERCEPTION, PRE-READING TEST	0.56915	0.32393	0.03399	0.36330
EDUCATION OF MOTHER IN YEARS	0.60855	0.37033	0.04641	0.27414
INTACT FAMILY	0.62358	0.38886	0.01852	0.04219
TEACHER AUTONOMY, KERLINGER VII	0.65972	0.43522	0.04637	0.27456
TEACHER INDIVIDUALIZATION, KERLINGER VII	0.67777	0.45938	0.02415	0.15033
TEACHER RECONSTRUCTIONISM, KERLINGER VII	0.69283	0.48001	0.02064	-0.25165
TEACHER EMPHASIS ON ATTITUDE, KERLINGER	0.70665	0.49935	0.01934	-0.14946

TABLE 24

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF ORAL READING AMONG FIRST GRADE FEMALES (n=188)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
AUDITORY MEMORY, PRE-READING TEST	0.31132	0.09692	0.09692	0.31132
REVERSALS, PRE-READING TEST	0.38139	0.14546	0.04854	0.27973
TEACHER SPONTANIETY, RATING	0.43228	0.18686	0.04140	-0.24461
EDUCATION OF FATHER IN YEARS	0.45574	0.20770	0.02084	0.17572
TEACHER AUTONOMY, KERLINGER VII	0.49833	0.24834	0.04063	0.09032
TEACHER AUTHORITARIANISM, KERLINGER VII	0.51976	0.27015	0.02182	-0.04195
TEACHER EXPECTATION OF TEACHING READING	0.53469	0.28590	0.01575	0.16772
TEACHER EXPERIMENTALISM, KERLINGER VII	0.55391	0.30681	0.02092	0.08931
WORD REPRODUCTION, PRE-READING TEST	0.56940	0.32421	0.01740	0.20340
STUDENT'S EXTENSIVE TRAVEL, RATING	0.58466	0.34182	0.01761	0.13911

TABLE 25

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING VOCABULARY AMONG FIRST GRADE FEMALES (n=188)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
REVERSALS, PRE-READING TEST	0.47225	0.22302	0.22302	0.47225
AUDITORY MEMORY, PRE-READING TEST	0.54624	0.29838	0.07535	0.36590
WORD REPRODUCTION, PRE-READING TEST	0.56394	0.31803	0.01965	0.30087
NORMAL VISION	0.57704	0.33298	0.01494	0.16722
TEACHER RECONSTRUCTIONISM, KERLINGER VII	0.60824	0.36996	0.03698	-0.26279
TEACHER INDIVIDUALIZATION, KERLINGER VII	0.63100	0.39817	0.02821	0.11878
TEACHER ADAPTABILITY, RATING	0.65083	0.42358	0.02542	0.23771
TEACHER DISCIPLINE EMPHASIS, KERLINGER	0.66858	0.44700	0.02341	-0.19091
NORMAL CLASSROOM PARTICIPATION, RATING	0.67889	0.46089	0.01389	0.10909
TEACHER SPONTANIETY, RATING	0.68952	0.47544	0.01455	-0.17350
TEACHER EXPERIMENTALISM, KERLINGER VII	0.69791	0.48708	0.01164	0.10162
INTACT FAMILY	0.70574	0.49808	0.01100	0.06195

TABLE 26

MULTIPLE AND SIMPLE CORRELATIONS OF SIGNIFICANT PREDICTORS OF READING COMPREHENSION AMONG FIRST GRADE FEMALES (n=188)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
REVERSALS, PRE-READING TEST	0.41959	0.17606	0.17606	0.41959
AUDITORY MEMORY, PRE-READING TEST	0.49945	0.24945	0.07339	0.35153
WORD REPRODUCTION, PRE-READING TEST	0.52563	0.27628	0.02683	0.31014
VISUO-MOTOR, PRE-READING TEST	0.54690	0.29910	0.02282	0.36044
EDUCATION OF FATHER IN YEARS	0.57109	0.32615	0.02705	0.26400
EMPLOYMENT OF MOTHER	0.58544	0.34274	0.01660	0.22564
NORMAL VISION	0.59825	0.35791	0.01516	0.14643
TEACHER INDIVIDUALIZATION, KERLINGER VII	0.62607	0.39196	0.03406	0.14981
TEACHER ADAPTABILITY, RATING	0.64043	0.41015	0.01818	0.19731
SMALLER NUMBER OF STUDENTS IN CLASS	0.65580	0.43007	0.01993	0.26283
STUDENT'S EXTENSIVE TRAVEL, RATING	0.66946	0.44818	0.01811	0.23059

TABLE 27

MULTIPLE AND SIMPLE CORRELATIONS OF PRE-READING TEST AND SCAMIN SUBTESTS WITH ORAL READING AMONG EXPERIMENTAL GROUP (n=179)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
FAILURE AVOIDANCE, SCAMIN	0.22245	0.04948	0.04948	0.22245
REVERSALS, PRE-READING TEST	0.36406	0.13254	0.08306	0.30591
WORD MATCHING, PRE-READING TEST	0.39041	0.15242	0.01988	0.26777

TABLE 28

MULTIPLE AND SIMPLE CORRELATIONS OF PRE-READING TEST AND SCAMIN SUBTESTS WITH READING VOCABULARY AMONG EXPERIMENTAL GROUP

(n=179)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
FAILURE AVOIDANCE, SCAMIN	0.28730	0.08254	0.08254	0.28730
SELF CONCEPT, SCAMIN	0.32749	0.10725	0.02471	0.15257
REVERSALS, PRE-READING TEST	0.53533	0.28657	0.17932	0.46468
VISUO-MOTOR, PRE-READING TEST	0.57271	0.32800	0.04142	0.37280
AUDITORY PERCEPTION, PRE-READING TEST	0.58968	0.34772	0.01973	0.33943

TABLE 29

MULTIPLE AND SIMPLE CORRELATIONS OF PRE-READING TEST AND SCAMIN SUBTESTS WITH READING COMPREHENSION AMONG EXPERIMENTAL GROUP

(n=179)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
FAILURE AVOIDANCE, SCAMIN	0.24422	0.05964	0.05964	0.24422
ACHIEVEMENT NEEDS, SCAMIN	0.28737	0.08258	0.02294	0.16282
WORD RECOGNITION, PRE-READING TEST	0.44723	0.20001	0.11743	0.36363
REVERSALS, PRE-READING TEST	0.50456	0.25458	0.05457	0.37524
WORD MATCHING, PRE-READING TEST	0.52967	0.28055	0.02597	0.37400

TABLE 30

MULTIPLE AND SIMPLE CORRELATIONS OF DEHIRSCH PREDICTIVE INDEX WITH ORAL READING AMONG EXPERIMENTAL GROUP (n=179)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
WORD RECOGNITION I & II, DEHIRSCH INDEX	0.38276	0.14651	0.14651	0.38276
WORD MATCHING, DEHIRSCH INDEX	0.43378	0.18817	0.04166	0.31993

TABLE 31

MULTIPLE AND SIMPLE CORRELATIONS OF DEHIRSCH PREDICTIVE INDEX WITH READING VOCABULARY AMONG EXPERIMENTAL GROUP (n=179)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
WORD RECOGNITION I & II, DEHIRSCH INDEX	0.38758	0.15022	0.15022	0.38758
HORST REVERSALS, DEHIRSCH INDEX	0.45881	0.21051	0.06029	0.36175
BENDER, DEHIRSCH INDEX	0.47898	0.22942	0.01891	0.31094

TABLE 32

MULTIPLE AND SIMPLE CORRELATIONS OF DEHIRSCH PREDICTIVE INDEX WITH READING COMPREHENSION AMONG EXPERIMENTAL GROUP (n=179)

	MULTIPLE R	R SQUARE	RSQ CHANGE	SIMPLE R
WORD RECOGNITION I & II, DEHIRSCH INDEX	0.40195	0.16156	0.16156	0.40195
WORD MATCHING, DEHIRSCH INDEX	0.47333	0.22404	0.06248	0.36956

APPENDIX F

WAYNE COUNTY PRE-READING TEST

Directions for Administering

Purpose

The Wayne County PRE-READING TEST is designed to assess the developmental level of children in certain areas which seem to be extremely important in learning to read. The test has been patterned after the Predictive Index Battery described by deHirsch, Jansky and Langford in *Predicting Reading Failure*. [1]

Target Group

The test can be given during the second semester of kindergarten or the first week or two in first grade. It should identify potential reading failures and the areas of weakness or difficulty.

Content

The sub-tests measure the child's competence in sensorimotor, perceptual and linguistic skills. A test of pencil mastery is used to assess *fine motor patterning*. *Visual-perceptual patterning* is tested by requiring the child to copy various forms and shapes. *Auditory-perceptual patterning* is measured by tests of *auditory memory* and *auditory discrimination*. The ability to generalize is tested by categories where the child is asked to determine which objects belong together.

Reading Readiness Tests include a test of Reversals, Word Matching, two tests of Word Recognition, and a test requiring reproduction of words previously taught. The first word recognition test requires the child to pick out two words previously taught in a vertical list of ten words. The second, requires the child to identify the two words from a list of ten words on a horizontal plan. The Word Reproduction test involves having a child write from memory the two words which have been previously taught.

Use of Results

The test should help identify those children for whom failure can be predicted unless specific intervention takes place. It also diagnoses specific areas of developmental lag or weakness so that appropriate teaching strategies may be applied.

Katrina deHirsch, Jeannette Jansky and William Langford, *Predicting Reading Failure* (New York: Harper and Row), 1966.

General

The class should be divided into groups no larger than 12 for the test. If paraprofessionals or student helpers are available, they may be used to make certain that each child is at the proper place at all times. Some of the tests require masks or markers. These, as well as a supply of sharpened pencils or crayons should be at hand before beginning the test.

It is well to give the test in two sittings. Should the children become tired or restless, the first sitting can be interrupted after any of the subtests. The second sitting, however, should be completed without a break.

The first page should be filled out before passing out the student booklet.

FIRST SITTING

Test 1: Pencil Use

The teacher may record her observations here at the same time she is filling out the required information on the test booklet. If she is uncertain of any child's performance with a pencil, she may observe him as he completes the test. If the child's grasp is so loose that he can hardly hold a pencil, record a score of 1 after "Grasp too loose" on the first page. If he is unable to manipulate a pencil or if he presses so hard that he tears the page, he is scored 2. If he handles a pencil adequately, he is socred 3.

Test 2: Visuo-Motor Skill

A sheet of blank paper should be inserted behind Test 2 so that the pictures from the following page will not show through. Direct each child to turn the page and fold back the first sheet. Say, "Here are some pictures for you to copy. In the space beside each picture, make another one just like it."

When it appears that all children have finished, say, "Now will you turn this page and fold it back just as you did the first one." Now put the clean sheet of paper under this page. Here are some more pictures for you to copy. In the space beside each picture make another one just like it."

When all the children have finished, have them turn the page and fold it back.

Test 3: Auditory Discrimination

Before starting the test, have each child remove the piece of clean paper from his booklet and use it as a marker. This test will require very careful direction. The ability to discriminate between words that have common elements is being tested. Some children, however, may have difficulty understanding the task. They are asked to determine whether the examiner is saying the same word twice or two different words. Do not begin the first test item until the children understand what is meant by "same" and "different." Another potential source of difficulty is in the use of the response sheet. Here, too, try to make certain that the children understand how to respond. The following directions should be modified as necessary.

Say, "I am going to say two words. Listen very carefully. Do I say the same word twice or two different words? Listen: school, home. That's right, I said two different words. Listen again: Mother, brother. Did I say the same word twice? No, I said two different words. Listen again: Mary, Mary. Yes, that time I said the same word twice. Listen: name, name. Yes, I said the same word twice again." "Now look at your paper. Put your marker under the first row of pictures, the one starting with two cups. Do you see that on one side of your paper the pictures are the same? On the other side, they are different. I am going to say some more pairs of words. If I say the same word twice put a mark like this on the two pictures that are the same." Show how to place X on the two pictures. "If I say two different words, put a mark like this on the pictures of two different things." Show how to mark the paper. "Put your marker on the first row." Check to make sure each child is looking at the first row on the paper. "Now listen: good, good. Did I say the same word twice? Yes, I did. Now put a mark on the two cups that are the same."

Check to see that each child has marked the correct pictures.

"Now I am going to say some other words. If I say the same word twice, mark the two pictures that are the same. If I say two different words, mark the two pictures that are different."

The examiner should make sure that each child is on the proper row at all times. Aides can be useful here. The marker should be used to help children find and keep the place. Say, "Move your marker down to the next row, the one that starts with two balls. Are you ready to listen? Remember you listen to the words, decide whether I said the same word twice or two different words, and then mark the right pictures."

1. night - night

Move your marker down to the row that starts with two horns. Listen:

2. head - said

Move your marker down to the row that starts with two tops. Listen:

3. man - man

Move your marker down to the row that starts with two forks. Listen:

4. ate - ate

Move your marker down to the row that starts with two dogs. Listen:

5. him - hit

Move your marker down to the row that starts with two clocks. Listen:

6. child - child

Move your marker down to the row that starts with two chairs. Listen:

7. train - train

Move your marker down to the row that starts with two boats. Listen:

8. chin - chain

Move your marker down to the row that starts with two kittens. Listen:

9. stop - tops

Move your marker down to the row that starts with two swings. Listen:

10. boy - boil

"Turn the page and fold it back. Now put your marker under the first row, the one that starts with two balls. Listen:

11. anger - angry

Move your marker down to the row that starts with two horns. Listen:

12. plate - plate

Move your marker down to the row that starts with two tops. Listen:

13. soon - soup

Move your marker down to the row that starts with two forks. Listen:

14. father - father

Move your marker down to the row that starts with two dogs. Listen:

15. farther - feather

Move your marker down to the row that starts with two clocks. Listen:

16. water - wetter

Move your marker down to the row that starts with two chairs. Listen:

17. had - hid

Move your marker down to the row that starts with two boats. Listen:

18. came - came

Move your marker down to the row that starts with two kittens. Listen:

19. imitate - imitate

Move your marker down to the row that starts with two swings. Listen:

20. revolve - revive

Now turn the page and fold it back, the way you did the others."

Test 4: Auditory Memory

Say, "Put your marker on this page so that all the pictures are covered." Check to make sure that each child has his marker in the correct position. Say, "I am going to say some words to you while the pictures are all covered. After I say the words, move your marker down to the next row and put X on the picture of the words I said. Remember to mark only the pictures of the words that I say. Don't make any marks on pictures of words I don't say." "Ready? The first word is box. Now move your marker down one row and put X on the box." Check to see that each child has marked the picture of a box. "Do not move your marker again until I tell you to."

"Ready? The next word is doll. Move your marker down to the next row and put X on the doll." Pause while the children mark.

"Don't move your markers to the next row until I say the words. Ready?

b. car, leaves

c. cup, top

d. cow, wheel, dog

e. swing, gun, flag, clock

f. horn, kitten, lamp, chair

Now turn the page and fold it back, the way you did the others."

Test 5: Categories

Say, "Put your marker under the first row, the one that starts with tree." Make certain that each child has his marker in the proper place. Say, "In each row there are two pictures that belong together. Look at all the pictures in the first row. Which two belong together? That's right, the moon and star belong together. Now put a mark on the moon and the star like this." Show how to put X on the pictures.

"Now move your marker down to the next row, the one that starts with a cup. Can someone tell me what the pictures are? That's right. Now put a mark on the two that go together."

"Move your marker down to the next row, the one that starts with a boy. Who can tell what these pictures are? Now decide which two belong together and put a mark on those pictures."

"Move your marker down to the next row, the one that starts with a picture of leaves. What are the pictures? Mark the two that go together."

"Move your marker down to the next row, the one that begins with a spoon. What are the pictures? Mark the two that go together."

"Look at the bottom row, the own that begins with a flag. What are the pictures? Put a mark on the two that belong together."

"Now you may close your books. You have worked very hard. Thank you."

The first testing session should stop at this point. Children may take a break and finish the test or the test may be completed another day.

SECOND SITTING

Each child will need pencil and paper. Say, "Today we are all going to do some work with words and pictures. Would you like to learn how to read two words? Here is the word bat." Show the flashcard.

"Can you say bat? Take a good look at the word. Let's all say it together, bat. What is this word?" Show the flashcard again. Show the flashcard to each child in turn and have him respond with bat. If he does not know the word, supply it and ask him to repeat it.

"Now here is a different word. This word is chair." Show the flashcard.

"What is this word? (Show bat.) What is this word? (Show chair.) Now I am going to hold out both words (one in each hand at arm's length). Point to bat. Point to chair.

"I will write both words on the blackboard. Will you please copy the word bat? Now write the word chair."

Collect the paper on which the words are written.

Test 6: Reversals

Each child will need a marker and a pencil. Say, "Open your booklet to this page."

Show the children which page to use and make certain they all have the correct page.

Say, "Now we are going to do some matching. Put your marker under the first row on your paper. Find the word in the box. Look at the rest of the row. Do you find any other words exactly like the one in the box? All right. Put a mark on each one that is exactly like the one in the box . . . which ones did you mark?" Check to see that each child marked all the correct responses. Now move your marker down to the next row. Mark each word that is exactly like the word in the box. You may finish the page by yourselves."

When all the children have finished, have them turn the page and fold it back.

Test 7: Word Matching

Have children place markers under first row.

Say, "On your paper you will see some boxes. Look at the words in each box very carefully. Two of the words in each box are the same, and the others are different. Find the two words in the first box which are the same. Put your fingers on them. That's right. Those words are the same. Now make a mark from one word to the other word just like it."

Check to see that the children are marking correctly. Say, "Now find the words that are the same in the other boxes in this row. . . move your marker down to the next row. Mark the words in each box that are the same." Note: Use markers if necessary. Check to make certain that no boxes are omitted. When all children have finished, have them turn the page and fold it back.

Test 8: Word Recognition I

Have children place a mask or marker on the bottom part of the page. Say, "Do you remember the two words you learned a few minutes ago? That's right, bat and chair. (If students don't remember, tell them.) Here is a list of words you don't know, but hidden in the list are the words you learned. Put a mark on the two words you learned."

When the children have finished, have them move the mask or marker to the top part of the page.

Test 9: Word Recognition II

Say, "Here is another list. Bat and chair are hidden in this list, too. Put a mark on them.

When all the children have finished, have them turn the page and fold it back.

Test 10: Word Reproduction

Show the flashcards with bat and chair again. Say, "Here are your two words again. Take a good look at them before I take them away. Now try to write both words on your paper just as you did a few minutes ago. Write as much of each word as you can remember."

When all children have finished, collect the test booklets.

WAYNE COUNTY PRE-READING TEST

Directions for Administering

Purpose

The Wayne County PRE-READING TEST is designed to assess the developmental level of children in certain areas which seem to be extremely important in learning to read. The test has been patterned after the Predictive Index Battery described by deHirsch, Jansky and Langford in Predicting Reading Failure.[1]

Target Group

The test can be given during the second semester of kindergarten or the first week or two in first grade. It should identify potential reading failures and the areas of weakness or difficulty.

Content

Observation of the child's pencil mastery is used to assess fine motor patterning. Visual-perceptual patterning is tested by requiring the child to copy various forms and shapes. Auditory-perceptual patterning is measured by tests of auditory memory and auditory discrimination. The ability to generalize is tested by categories where the child is asked to determine which objects belong together.

Reading Readiness Tests include a test of reversals, word matching, two tests of word recognition, and a test requiring reproduction of words previously taught. The first word recognition test requires the child to pick out three words previously taught in a vertical list of ten words. The second, requires the child to identify the same three words from a list of ten words on a horizontal plane. The word reproduction test involves having a child write the three words from memory.

Use of Results

The test should help identify those children for whom failure can be predicted unless specific intervention takes place. It also diagnoses specific areas of developmental lag or weakness so that appropriate teaching strategies may be applied.[2]

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[1] Katrina deHirsch, Jeannette Jansky and William Langford, Predicting Reading Failure (New York: Harper and Row), 1966.

[2] See Rachel Brake, The Wayne County Pre-Reading Program for Preventing Reading Failure (Detroit: Wayne County Intermediate School District, 1500 Kales Building), 1971.

Directions for Administering

The class should be divided into groups of no larger than 12 children for the test. If paraprofessionals or student helpers are available, they may be used to make certain that each child is at the proper place at all times. Some of the tests require masks or markers. These, as well as a supply of sharpened pencils or crayons should be at hand before beginning the test.

It is well to give the test in two sittings. Should the children become tired or restless, the first sitting can be interrupted after any of the subtests. The second sitting, however, should be completed without a break.

The first page should be filled out before passing out the student booklet. If the examiner has observed the child's performance with a pencil, the appropriate line at the bottom of the first page should be checked. If she is uncertain, she may observe him as he completes the test and then record her observations.

FIRST SITTING

Test 1: Visuo-Motor Skill

A sheet of blank paper should be inserted behind Test 1 so that the pictures from the following page will not show through. Direct each child to turn the page and fold back the first sheet. Say, "Here are some pictures for you to copy. In the space beside each picture, make another one just like it."

When it appears that all children have finished, say, "Now will you turn this page and fold it back just as you did the first one. Now put the clean sheet of paper under this page. Here are some more pictures for you to copy. In the space beside each picture make another one just like it."

When all the children have finished, have them turn the page and fold it back.

Test 2: Auditory Discrimination

Before starting the test, have each child remove the piece of clean paper from his booklet and use it as a marker. This test will require very careful direction. The ability to discriminate between words that have common elements is being tested. Some children, however, may have difficulty understanding the task. They are asked to determine whether the examiner is saying the same word twice or two different words. Do not begin the first test item until the children understand what is meant by "same" and "different." Another potential source of difficulty is in the use of the response sheet. Here, too, try to make certain that the children understand how to respond. Some examiners have found it helpful to draw three or four samples on the chalkboard and use these as a class exercise before turning to the sample item on the test. The following directions should be modified as necessary.

Say, "I am going to say two words. Listen very carefully. Do I say the same word twice or two different words? Listen: school, home. That's right, I said two different words. Listen again: mother, brother. Did I say the same word twice? No, I said two different words. Listen again: Mary, Mary. Yes, that time I said the same word twice. Listen: name, name. Yes, I said the same word twice again.

Now look at your paper. Put your marker under the first row of pictures, the one starting with two cups. Do you see that on one side of your paper the pictures are the same? On the other side, they are different. I am going to say some more pairs of words. If I say the same word twice put a mark like this on the two pictures that are the same." Show how to place X on the two pictures. "If I say two different words, put a mark like this on the pictures of two different things." Show how to mark the paper. "Put your marker under the first row." Check to make sure each child is looking at the first row on the paper. "Now listen: good, good. Did I say the same word twice? Yes, I did. Now put a mark on the two cups that are the same."

Check to see that each child has marked the correct pictures.

"Now I am going to say some other words. If I say the same word twice, mark the two pictures that are the same. If I say two different words, mark the two pictures that are different."

The examiner should make sure that each child is on the proper row at all times. Aides can be useful here. The marker should be used to help children find and keep the place. Say, "Move your marker down to the next row, the one that starts with two balls. Are you ready to listen? Remember you listen to the words, decide whether I said the same word twice or two different words, and then mark the right pictures."

1. night - night

Move your marker down to the row that starts with two horns. Listen:

2. boy - toy

Move your marker down to the row that starts with two tops. Listen:

3. man - man

Move your marker down to the row that starts with two forks. Listen:

4. train - train

Move your marker down to the row that starts with two dogs. Listen:

5. stop - tops

Move your marker down to the row that starts with two clocks. Listen:

6. anger - angry

Move your marker down to the row that starts with two chairs. Listen:

7. soon - soup

Move your marker down to the row that starts with two boats. Listen:

8. farther - feather

Move your marker down to the row that starts with two kittens. Listen:

9. head - said

Move your marker down to the row that starts with two swings. Listen:

10. imitate - imitate

Now turn the page and fold it back, the way you did the others."

Test 3: Auditory Memory

Say, "Put your marker on this page so that all the pictures are covered." Check to make sure that each child has his marker in the correct position. Say, "I am going to say a word to you while the pictures are all covered. After I say the word, move your marker down to the first row and put X on the picture of the word I said. Remember to mark only the picture of the word that I say. Don't make any marks on pictures of words I don't say." "Ready? The first word is box. Now move your marker down one row and put X on the word I said." Check to see that each child has marked the picture of a box. "Do not move your marker again until I tell you to."

"Ready? The next word is doll. Now move your marker down to the next row and put X on the word I said." Pause while the children mark, "Don't move your markers to the next row until I say the words. Ready? Listen carefully. I'll say more than one word this time.

b. car, leaves

Now move your marker down and put X on the words I said." Continue in this manner for the rest of the test.

c. cup, top

d. cow, wheel, dog

e. swing, gun, flag, clock

f. horn, kitten, lamp, chair

"Now turn the page and fold it back, the way you did the others."

Test 4: Categories

Say, "Put your marker under the first row, the one that starts with tree." Make certain that each child has his marker in the proper place. Say, "In each row there are two pictures that belong together. Look at all the pictures in the first row. Which two belong together? That's right, the moon and star belong together. Now put a mark on the moon and the star like this." Show how to put X on the pictures.

"Now move your marker down to the next row, the one that starts with a hammer. Can someone tell me what the pictures are? That's right. Now put a mark on the two that go together.

"Move your marker down to the next row, the one that starts with a flag. Who can tell what these pictures are? Now decide which two belong together and put a mark on these pictures."

"Move your marker down to the next row, the one that starts with a picture of leaves. What are the pictures? Mark the two that go together."

"Move your marker down to the next row, the one that begins with a spoon. What are the pictures? Mark the two that go together."

"Look at the bottom row, the one that begins with a boy. What are the pictures? Put a mark on the two that belong together."

"Now you may close your books. You have worked very hard. Thank you."

The first testing session should stop at this point. Children may take a break and finish the test or the test may be completed another day.

SECOND SITTING

Each child will need pencil and paper. You will need to prepare three flash cards, one each for did, boat and chair. Make sure the script you use matches that found in Tests 7 and 8. Use a half sheet of paper, or a 8-1/2 x 3-1/2 piece of tagboard. If you prefer, the chalkboard may be used also. Say, "Today we are all going to do some work with words. Would you like to learn how to read three words? Here is the word did." Show the flash card.

"Can you say did? Take a good look at the word. Let's all say it together, did. What is this word?" Show the flash card again. Show the flash card to each child in turn and have him respond with did. If he does not know the word, supply it and ask him to repeat it.

"Now here is a different word. This word is boat." Show the flash card.

"What is this word? (Show did.) What is this word? (Show boat.) Now I am going to hold out both words (one in each hand at arm's length). Point to did. Point to boat.

"Do you think you can learn still another word? This word is chair." Have each child identify the word. Then flash the three words in order, having a child identify each word. Provide more practice if indicated.

"I will write all three words on the chalkboard. Will you please copy the word did on your paper? Now write the word boat. Now write the word chair."

Collect the paper on which the words are written.

Test 5: Reversals

Each child will need a marker and a pencil. Say, "Open your booklet to this page."

Show the children which page to use and make certain they all have the correct page.

Say, "Now we are going to find some words that look exactly alike. Put your marker under the first row on your paper. Find the word in the box. Look at the rest of the row. Do you find any other words exactly like the one in the box? Good! Put a mark on each one that is exactly like the one in the box... Which ones did you mark?" Check to see that each child marked all the correct responses. Now move your marker down to the next row. Mark each word that is exactly like the word in the box. You may finish the page by yourselves.

When all the children have finished, have them turn the page and fold it back.

Test 6: Word Matching

Say, "On your paper you will see some boxes. Look at the words in each box very carefully. Two of the words in each box are the same, and the others are different. Put your markers under the first box, the only one on this line. Find the two words in this box which are the same. Put your fingers on them. That's right. Those words are the same. Now draw a line from one word to the other word that is just like it."

Check to see that the children are marking correctly. Say, "Now move your marker down to the next row and find the words that are the same in all the boxes in this row... Continue in this manner until all boxes are marked." Check to make certain that no boxes are omitted. When all children have finished, have them turn the page and fold it back.

Test 7: Word Recognition I

Have children place a mask or marker on the bottom part of the page. Say, "Do you remember the three words you learned a few minutes ago? That's right, did, boat and chair. (If students don't remember, tell them.) Here is a list of words you don't know, but hidden in the list are the words you learned. Put a mark on the three words you learned."

When the children have finished, have them move the mask or marker to the top part of the page.

Test 9: Word Recognition II

Say, "Here is another list. Did, boat and chair are hidden in this list, too. Put a mark on them.

When all the children have finished, have them turn the page and fold it back.

Test 10: Word Reproduction

Show the flash cards with did, boat and chair again. Say, "Here are your three words again. Take a good look at them before I take them away. Now try to write the three words on your paper just as you did a few minutes ago. Write as much of each word as you can remember.

When all children have finished, collect the test booklets.

Directions for Scoring

Each test should be scored according to directions on the answer key. Scores on each sub-test should be circled on the front page of the test booklet and a profile drawn. The profile indicates the areas in which a child falls below the critical score and is in need of the prescriptive pre-reading program.

WAYNE COUNTY PRE-READING TEST

STUDENT BOOKLET

Name ______________________________

School ______________________________ Date of Test ________________ Birth Date ______________

PROFILE

	Visuo-Motor Test 1	Auditory Discrimination Test 2	Auditory Memory Test 3	Categories Test 4	Reversals Test 5	Word Matching Test 6	Word Recognition Tests 7 and 8	Word Reproduction Test 9	Index Score
HIGH	16	10	16	5	10	12	6	9	9
	15								
	14				9	11		8	8
	13		15		8	10			
	12	9			7	9	5	7	7
	11								
	10		14	4	6				
	9					8		6	6
	8	8	13		5		4		
	7				4	7		5	5
	6								
CRITICAL SCORE	5	7	12	3	3	6	3	4	4
			11						
	4	6	10			5		3	3
		5	9	2	2		2		
	3		8			4			
		4	7					2	2
			6			3			
	2	3	5						
			4	1	1		1		
		2	3			2		1	1
	1	1	2						
			1			1			
LOW	0	0	0	0	0	0	0	0	0

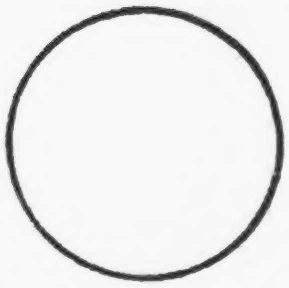
PENCIL USE

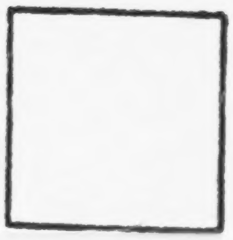
Grasp is too loose ________

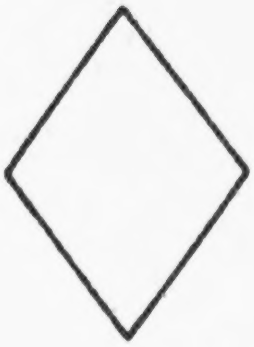
Presses too hard ________

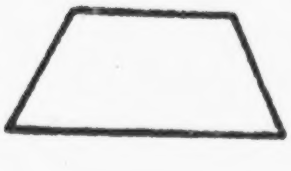
Satisfactory ________

TEST 1

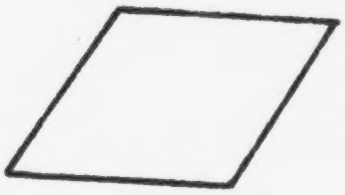


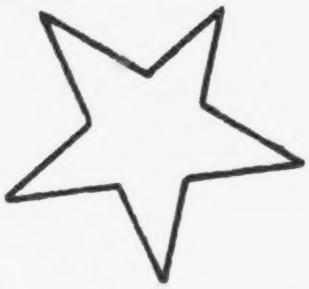


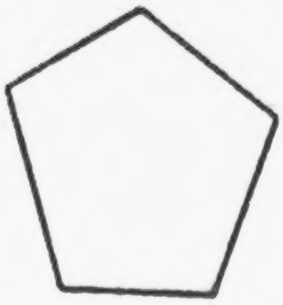


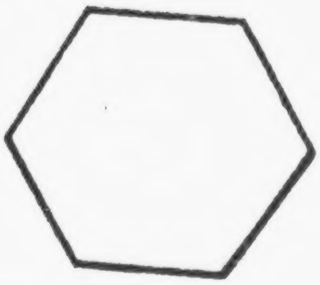


TEST 1





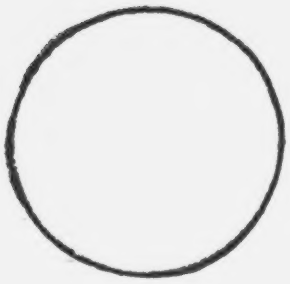


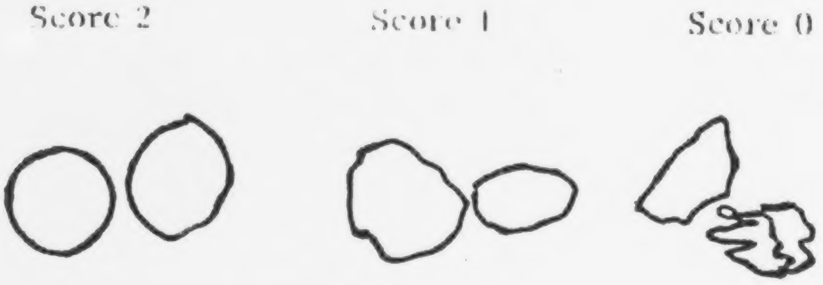


APPENDIX G

WAYNE COUNTY PRE-READING TEST SCORING MANUAL

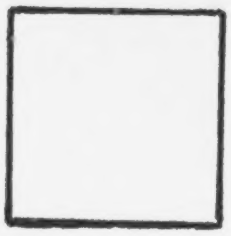
1.

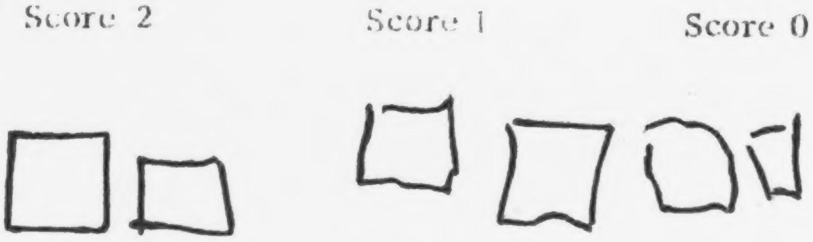




ircle with no breaks, practically no angular
regularities. No marked inward or outward bends.

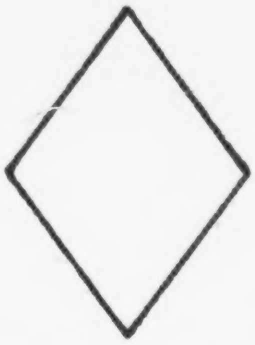
2.

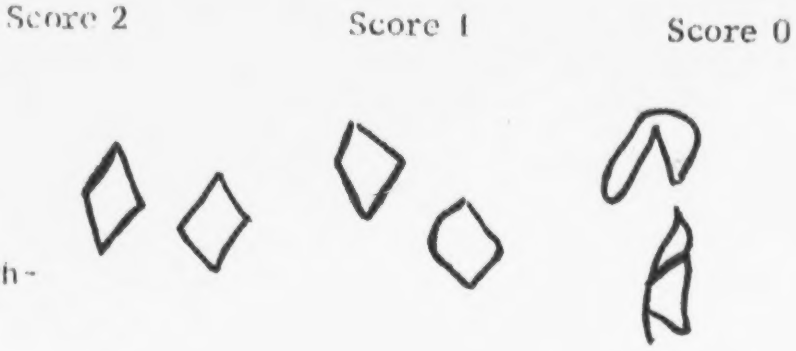




our lines, approximately equal. At least three
ngles approximately 90 degrees, and closed.

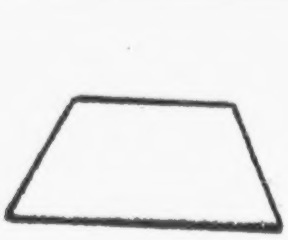
3.

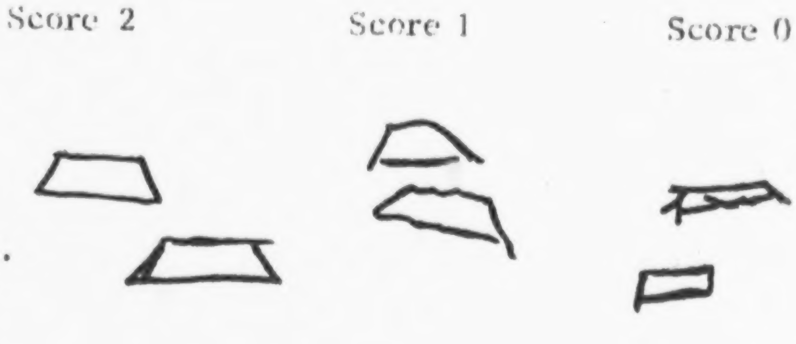




'our lines, general diamond-shaped appearance with-
ut jagged irregularities or more than one curve.
t least three corners closed.

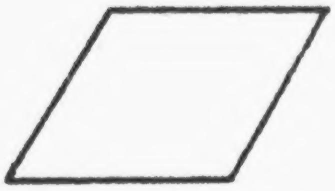
4.



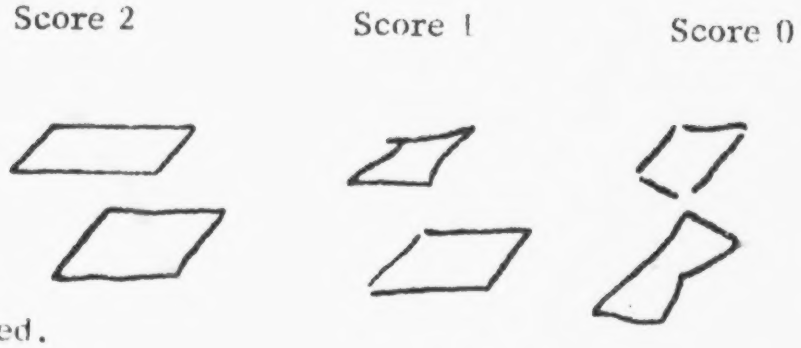


'our lines, horizontal lines approximately parallel.
)ther lines not parallel, with no right angles. At
east three angles closed. General appearance of
runcated prism.

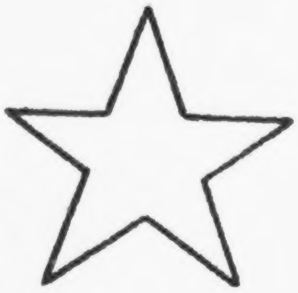
5.



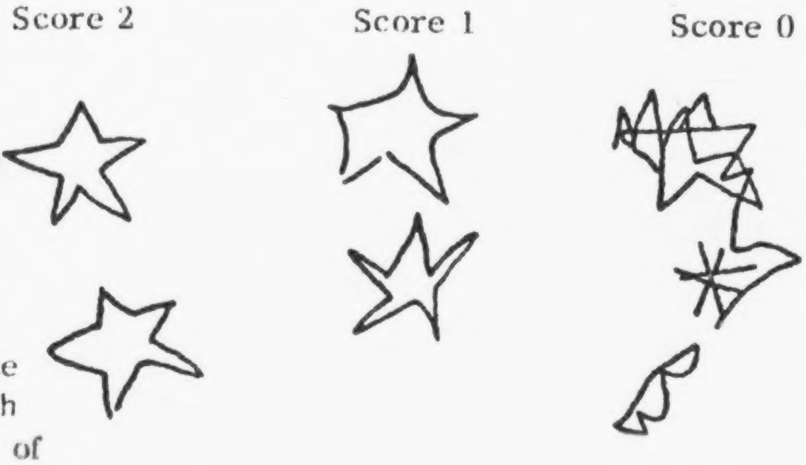
Parallelogram with four sides approximately equal. Opposite sides approximately parallel. Acute angles to make slant of sides. At least three corners closed. General appearance of parallelogram.



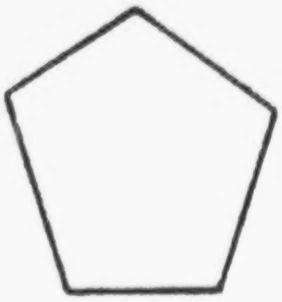
6.



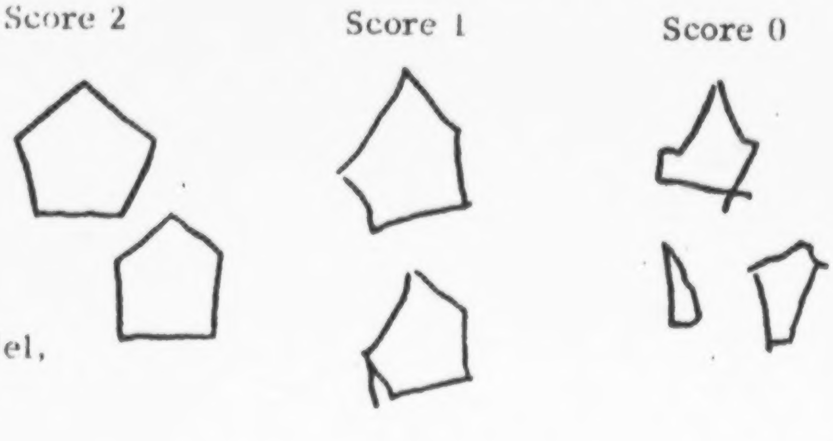
Five-pointed star--must present general appearance of star. Corners must be closed or nearly so, with each of at least four points closed, and with each of at least four angles between points closed.



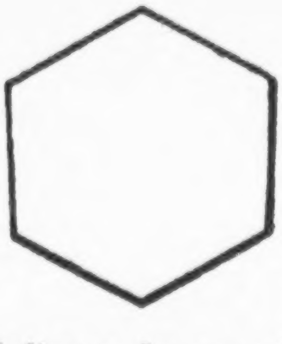
7.



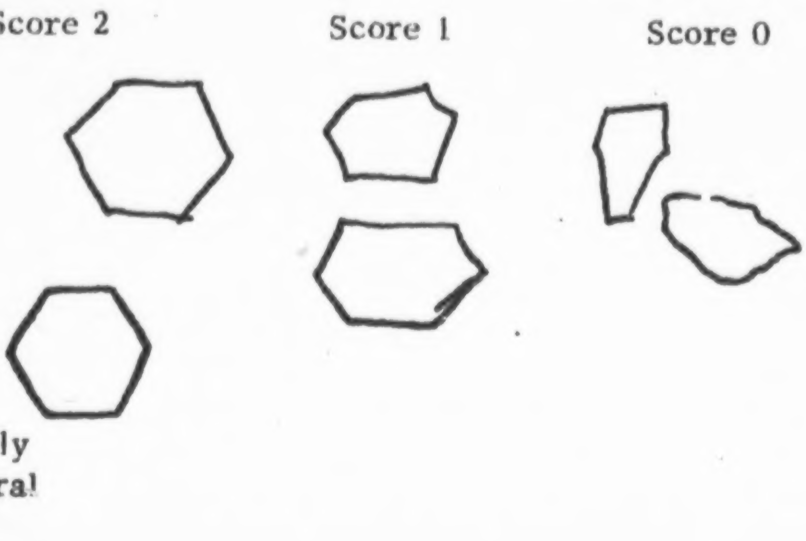
A pentagon with vertical sides approximately parallel, one horizontal base, all sides approximately equal. At least four angles closed.



8.

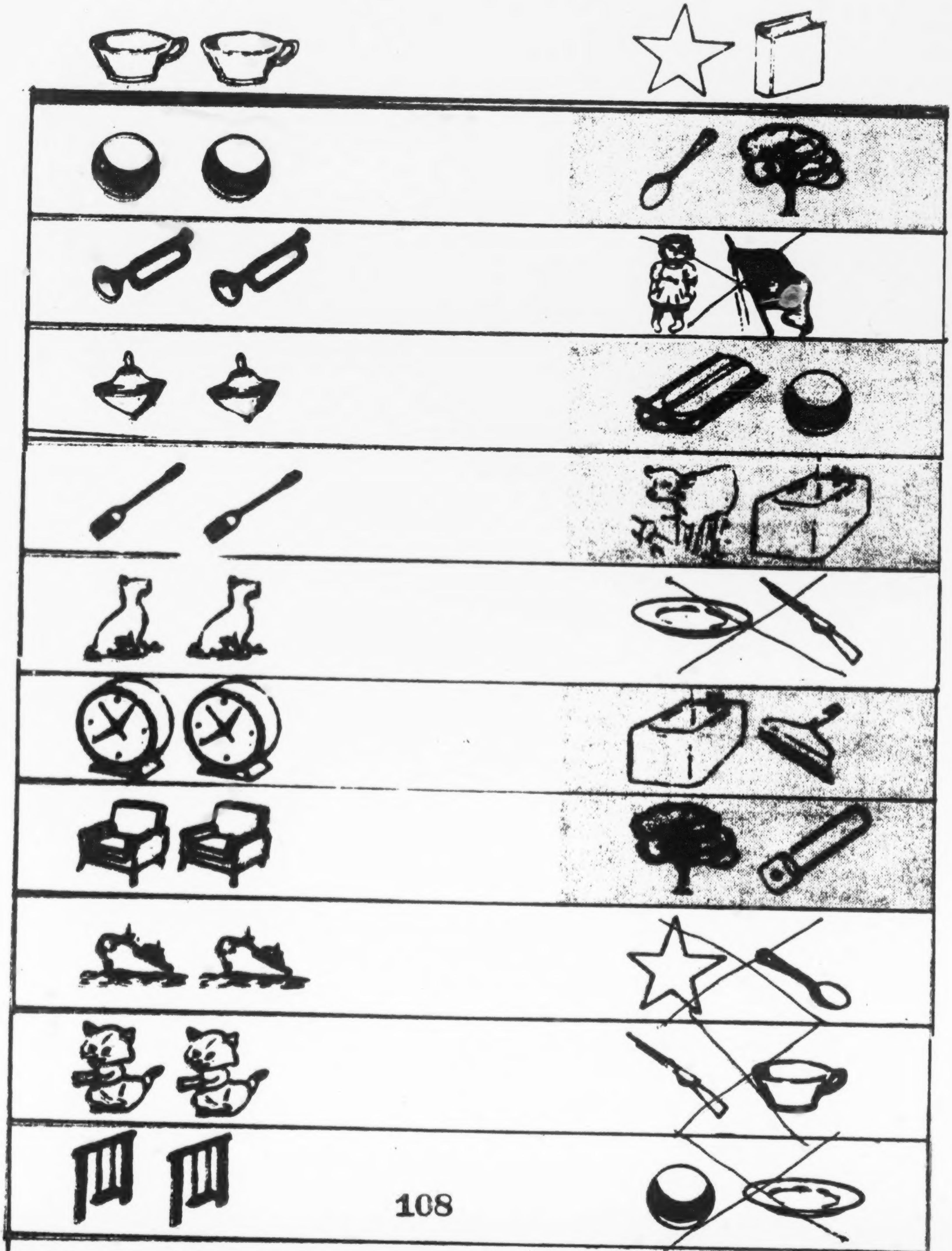


Six-sided figure (hexagon); opposite sides approximately parallel, and equal. At least five angles closed. General appearance of hexagon.

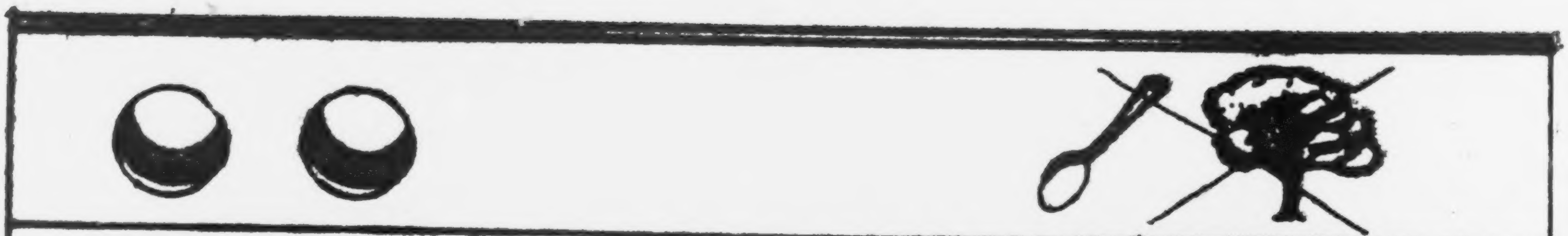


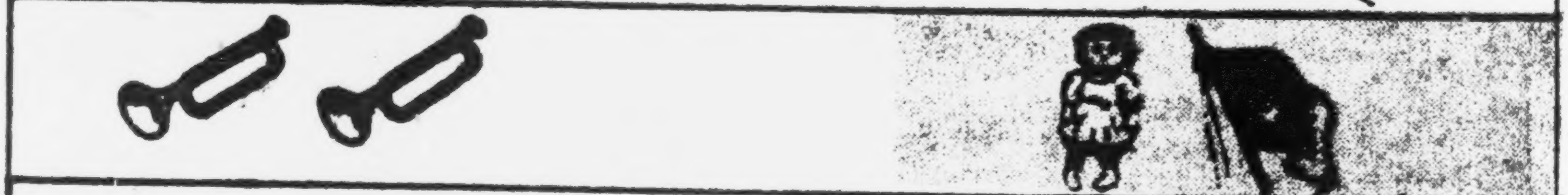
Score only items in right hand column. Ignore items in shaded areas. Maximum score - 11

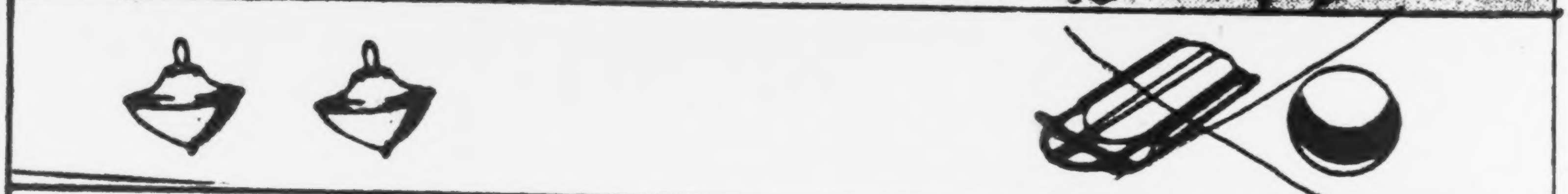
TEST 3

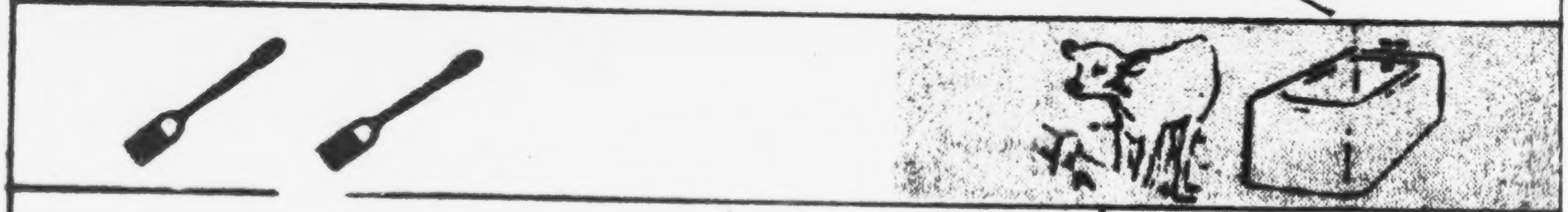


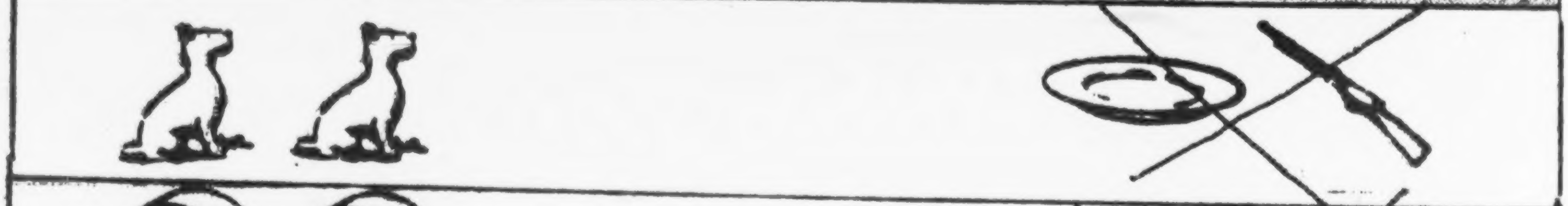
TEST 3

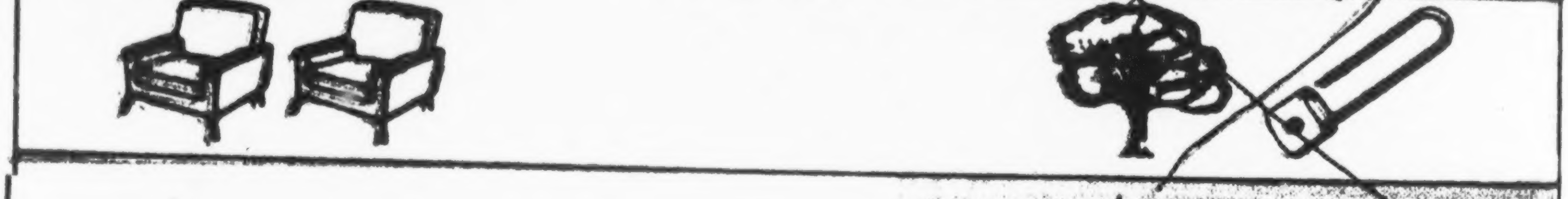


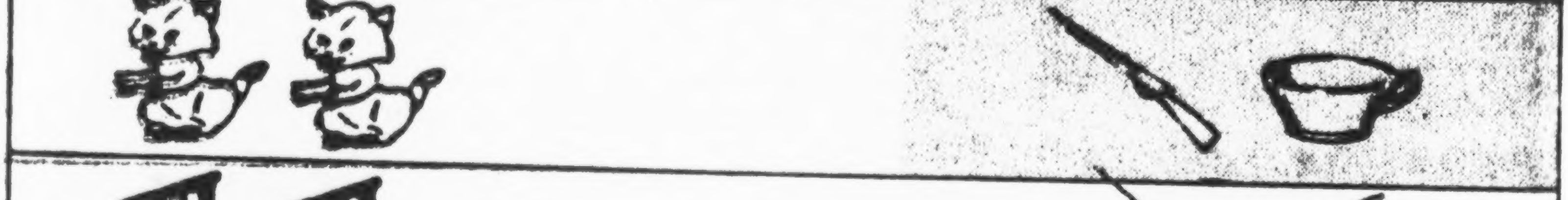


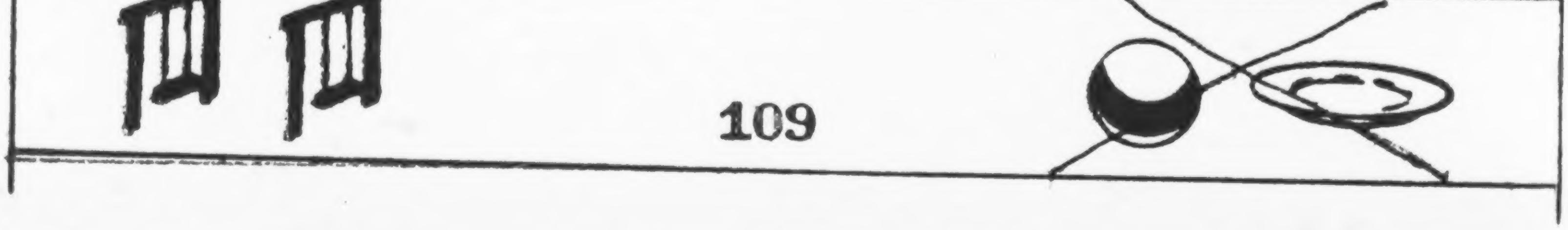






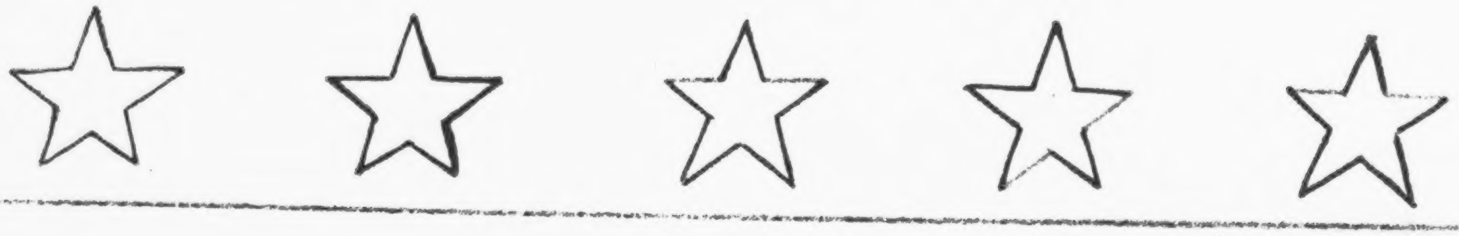






Score number missed. Maximum score - 16

TEST 4

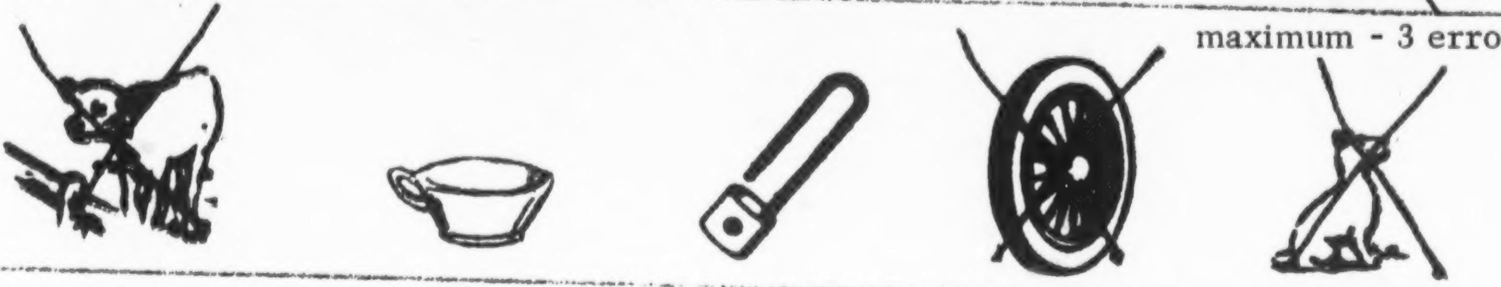


maximum - 1 error

maximum - 2 errors

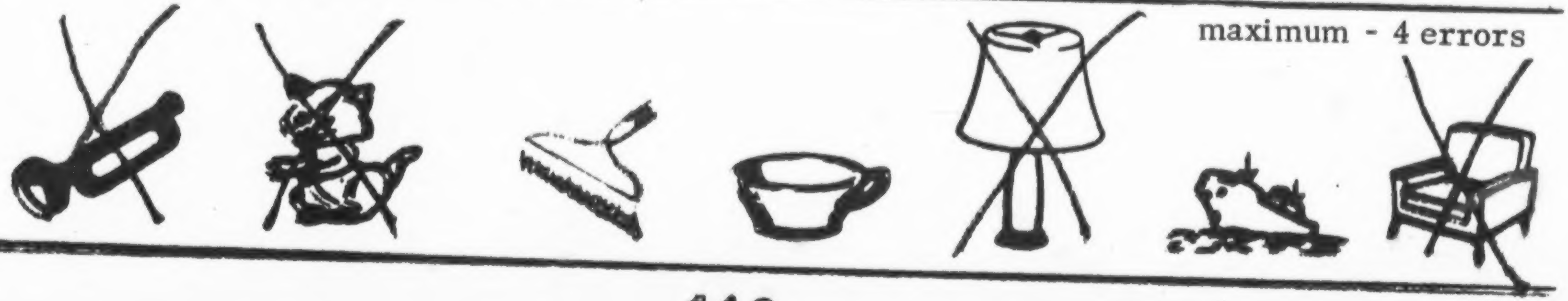
maximum - 2 errors

maximum - 3 errors



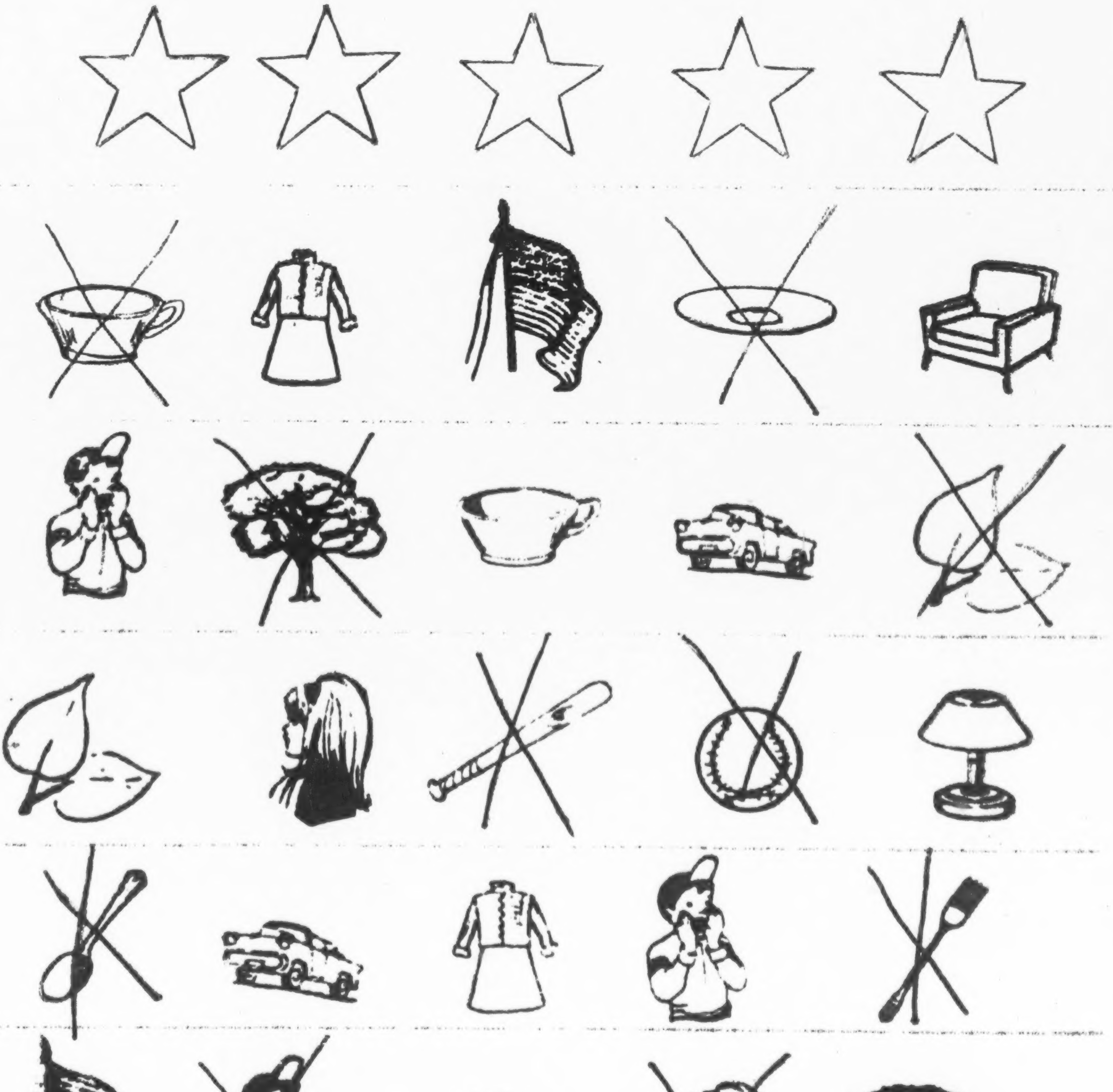
maximum - 4 errors

maximum - 4 errors



Score number of rows with an error. Maximum score - 5

TEST 5



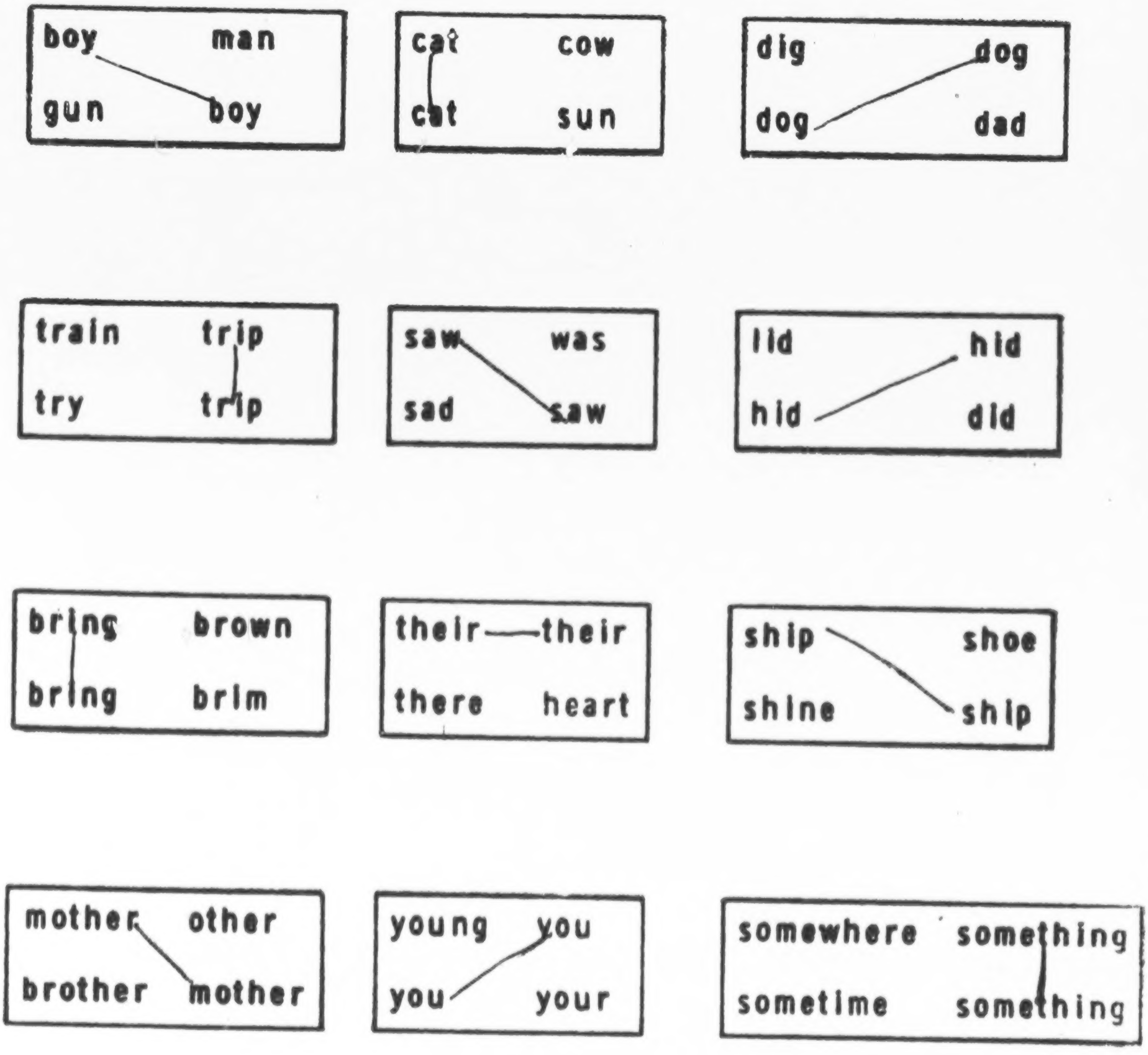
Score number of rows with an error. Maximum score - 10

TEST 6

on	no	no	~~on~~	no	~~on~~	~~on~~
at	ta	~~at~~	~~at~~	ta	~~at~~	ta
is	si	~~is~~	si	~~is~~	si	~~is~~
ar	ra	ra	~~ar~~	ra	~~ar~~	~~ar~~
be	~~be~~	eb	~~be~~	eb	~~be~~	eb
was	~~was~~	saw	saw	~~was~~		
man	~~man~~	nam	~~man~~	nam		
let	tel	~~let~~	tel	~~let~~		
pat	tap	tap	~~pat~~	~~pat~~		
gob	~~gob~~	bog	~~gob~~	bog		
won	now	~~won~~	now	~~won~~		

Score number of boxes with an error. Maximum score - 12

TEST 7



TEST 8

hat

did

dog

cat

sun

boat

truck

train

father

school

Score 1 if child misses dog.

Score 1 if child misses truck.

Note:

Score 2 if child marks more than 5 words, even if dog and truck are correct.

TEST 9

Score same as #8 above.

did hat dog cat boat

sun truck train father school

TEST 10

dog Score 3 - word spelled perfectly
Score 2 - 2 letters reproduced
Score 1 - 1 letter reproduced
Score 0 - failure to recall any letter

truck Score 3 - word spelled perfectly
Score 2 - 3 or 4 letters reproduced
Score 1 - 1 or 2 letters reproduced
Score 0 - failure to recall any letter

Maximum score - 6

Note:

1. Do not count reversals as errors, ie d for b.
2. Subtract 1 from total if any letters have been added.
3. Subtract 1 from total if letter order is confused.

APPENDIX H

RELIABILITIES OF WAYNE COUNTY PRE-READING TEST (N=337)

Sub-Test	Mean	Re-Test Reliability
* Visuo-Motor	8.04	.83
* Auditory-Perception	2.44	.87
Auditory - Memory	3.44	.61
Categories	1.46	.86
* Reversals	3.71	.77
* Word Matching	4.22	.64
* Word Recognition I and II (Spearman-Brown split halves)	1.90	.90
Word Reproduction	2.89	.67

Reliability of Self-Concept and Motivation Inventory

* Pre-School Kindergarten Self-Concept (Spearman-Brown split halves)	.79
Early Elementary Form (Test re-test)	.77

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*Significant predictors of reading achievement in first grade. Using the full model of predictors, the maximum multiple correlation with criterion was .81 for the boys. Square root transformations are used to normalize several of the subtest distributions.

APPENDIX I

COMMERCIAL INSTRUMENTS USED

Gates, Arthur I. and MacGinitie, Walter H. Gates-MacGinitie Reading Tests, Primary A, Form 1 --Vocabulary and Comprehension for Grade 1. New York: Teachers College Press, Teachers College, Columbia University, 1964.

Gray, William S. and Robinson, Helen M. (ed.). Gray Oral Reading Test, Form A. New York: The Bobbs-Merrill Company, Inc., 1963.

Milchus, Norman J., Farrah, George A., and Reitz, William. The Self-Concept and Motivation Inventory: What Face Would You Wear? --Pre-School/Kindergarten Machine Scoreable Form. Dearborn Heights: distributed by Person-o-metrics, 20504 Williamsburg Road, Dearborn Heights, Michigan 48127, 1967.